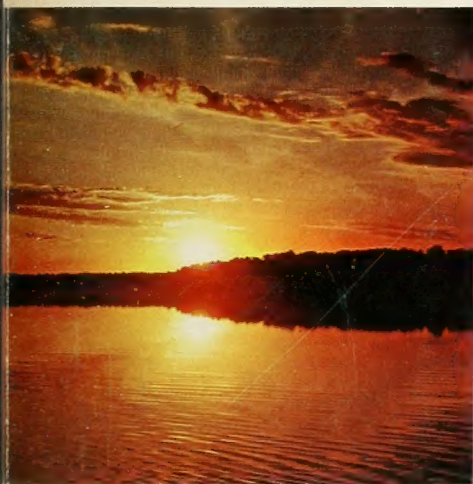




*John S. Bell*

# ANNUAL REPORT

OF THE MINISTER OF LANDS AND FORESTS OF THE PROVINCE OF ONTARIO FOR THE FISCAL YEAR ENDING MARCH 31, 1970.



DEPARTMENT OF  
LANDS AND FORESTS







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*Hon. Rene Brunelle on a visit to Sublimnos, the under-water habitat established for use by scientists. The buoy in background marks its location in Georgian Bay near Tobermory.*

TO HIS HONOUR,  
The Lieutenant-Governor  
of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR

The undersigned begs respectfully to present to your Honour, the Annual Report of the Department of Lands and Forests for the fiscal year beginning April 1st, 1969, and ending March 31, 1970.

RENE BRUNELLE  
Minister

DEPARTMENT OF  
LANDS AND FORESTS





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# FOREWORD

The Annual Report of the Minister is a review of the activities of the Ontario Department of Lands and Forests during the latest fiscal year completed. For both the present term and preceding years, additional detail is reported in "Statistics, 1971" which is released concurrently.

As this volume takes the form of a collection of annual reports by the Department's numerous subdivisions, it seems pertinent to note that these represent the considerable variety of the Department's responsibilities and the many duties discharged with the same over-all aim. This common aim is summarized in the Department's goal statement:

*To provide from Crown lands and waters, and to encourage on private lands and waters, a continuing combination of renewable resource production and outdoor recreation opportunities most consistent with the social and economic well-being of the people of Ontario.*

*Renewable resource production* refers to the production of plants and animals for industrial or commercial purposes. General examples are timber, fur and the commercial catch of fish. Agricultural production is not included.

*Outdoor recreation opportunities* refers to all recreational pursuits commonly associated with the natural environment and commonly believed to contribute to the physical health and mental well-being of the people who enjoy them. In keeping with the Department's aim, the term is interpreted broadly to include cultural activities concerned with the understanding of natural history and the Ontario environment. The opportunities include sport, relaxation, observation and study.

*Combination* refers to the *multiple use* of renewable, natural resources. The concept of multiple use, or integrated resource management, is basic. The demand for a wide variety of goods and services is increasing each year, but our land and water resources are limited. As the single-use concept becomes increasingly difficult, the Department's aim is to manage more and more areas for a number of uses.

*Continuing* refers to the concept of stewardship for future generations. It implies the custody and long-range management of renewable, natural resources for the benefit of Ontario's people in the future. It also implies the Department's deep interest in the principles of ecology and their application in the management of the natural environment.

It is believed that the following pages should be considered in relation to the Department's objectives which have developed from the effort to achieve the over-all goal. At the present time, the Department's specific objectives may be summarized as follows:

## RESOURCE ECONOMIC DEVELOPMENT

- To provide from Crown lands and waters, and to encourage on private lands and waters, the optimum, continuing contribution of renewable-resource production industries to the economy of Ontario and its communities.

## OUTDOOR RECREATION

- To provide opportunities for a wide variety of outdoor-recreation experiences for all the people of Ontario on a day-use basis.
- To provide opportunities for a wide variety of outdoor-recreation experiences on an economically sound scale for the people of Ontario on an over-night or extended-use basis.
- To provide continuing outdoor-recreation opportunities for tourism to benefit the economy of Ontario and its communities.



MINISTER OF LANDS AND FORESTS  
Hon. RENE BRUNELLE

# ORGANIZATION



EXECUTIVE ASSISTANT  
R. L. Kertson



DEPUTY MINISTER  
G. H. U. BAYLY

## CHIEFS OF HEAD OFFICE BRANCHES



ACCOUNTS  
R. R. MacBean



FISH AND  
WILDLIFE  
Dr. C. H. D. Clarke



FOREST  
PROTECTION  
W. T. Foster



LANDS AND  
SURVEYS  
R. G. Code



LAW  
G. H. Ferguson



OPERATIONS  
G. A. Hamilton



PARKS  
P. Addison



PERSONNEL  
J. M. Taylor



RESEARCH  
Dr. W. R. Henson



TIMBER  
A. J. Herridge



ASSISTANT  
DEPUTY MINISTER  
R. D. K. Acheson



NORTHWESTERN REGION  
REGIONAL DIRECTOR  
PORT ARTHUR  
L. Ringham



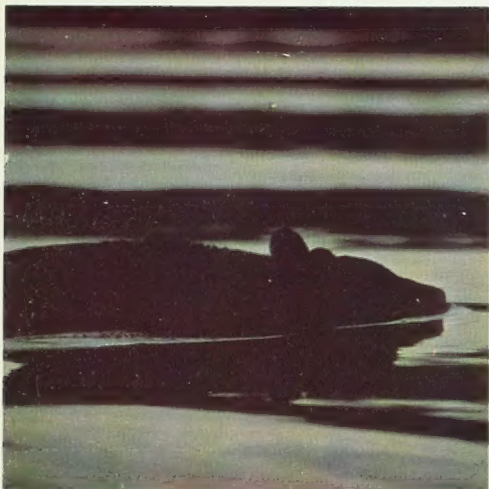
NORTHEASTERN REGION  
REGIONAL DIRECTOR  
SUDBURY  
J. W. Lockwood



SOUTHERN REGION  
REGIONAL DIRECTOR  
MAPLE  
J. W. Giles



# FISH AND WILDLIFE BRANCH



*Water and wildlife, symbolic of the natural environment of Ontario. Photo by D. W. Simkin.*

Fish and Wildlife Branch is divided into two sections and their subordinate units with duties and responsibilities as follows.

## WILDLIFE

- *Game Management:* Maintenance and increase of game abundance through improvement of habitat, regulations, inventory of game numbers, measure of participation by hunters, establishment of public hunting areas; and development of agreement with landowners to provide improved game habitat and hunting opportunities.
- *Fur Management:* Biologically sound management of fur-bearing animals; counselling of trappers to assist them in achieving the highest economic returns for their furs; regulations; stocking of animals in depleted areas; and licensing of fur farms.
- *Field Services:* Enforcement of the hunting and fishing regulations; development of training programs for conservation officers related to law enforcement; development of programs to secure the co-operation of the public in observing regulations; and conduct of hunter examinations.

## FISHERIES

- *Sport Fisheries and Hatcheries:* Planning, co-ordinating and stimulating programs to maintain, develop and expand the Province's sport fisheries through habitat improvement, regulations, inventory of fish populations, measurement of angler activity and angler harvests, development of provincial fishing areas, providing information, production of hatchery stock and assessment of its effectiveness, distribution of fish, and stimulation of commercial hatchery and private fish pond development.
- *Commercial Fisheries:* Planning and co-ordinating programs based on sound biologic, social and economic bases for the optimum commercial utilization of the Province's fishery resources; issuing licences; collection of statistics (both biologic and economic) on commercial harvests of fish; regulation of harvest through seasons, quotas, gear restrictions and other means; and the development of programs to assist and stimulate industry in catching, processing, handling and marketing of fish.
- *Fisheries Inventory:* Inventory of the waters of the Province; organization and co-ordination of the field programs; and implementation of data processing systems to utilize inventory information for biologic, economic and other uses.
- *Indian Resource Development:* Administration and co-ordination of resource program of fisheries, wildlife, forestry, recreation, etc., under the Federal-Provincial Resource Development Agreement; and development of programs for Indian use of resources.



# WILDLIFE SECTION

## DEER HUNTING AND MANAGEMENT

The deer management program in Ontario aims at providing recreation opportunities through hunting and viewing deer. Obviously we would like to provide as many opportunities as possible by maintaining and increasing deer numbers to the maximum levels which are consistent with other forest uses. Since the shortage of good winter range is the factor controlling deer numbers in Ontario, we direct our major efforts toward the management of that range, to improve the condition of existing winter deer range, and ultimately to produce more good winter range.

Providing the opportunities for recreation will not ensure that people use them. Often, other factors such as the weather interfere. This was the case with deer hunting in 1969. As in 1968, very adverse weather continued to frustrate the hunters. Frequent rain, accompanied at times by fog, helped the deer, and only on the last day or two was there enough snow for tracking.

It appeared that deer were still widely scattered over their summer range. Hunters who had done poorly in recent years in northern Parry Sound and Pembroke Forest Districts fared a little better this year. Other hunters, who usually have good hunts near deer yards, this year did poorly. It may have been that the summer distribution of deer fooled a few hunters too. Many hunters saw reasonably plentiful signs of deer but were unable to locate them. Throughout the deer range, percentages of fawns and yearlings were high. There was no indication of unusually heavy mortality. With good reproduction and light hunting, there is reason to hope for more deer next year.

For a second year, a mailed deer hunter survey was conducted by the Central Licence Bureau. All results from the computer-addressed questionnaires have not been compiled. However, preliminary results show a slight decrease in over-all hunter success percent.

In Pembroke District, hunter success declined slightly to 13.1% from 14.5% in 1968. It was also down in Kemptville District. In Tweed District, it was just about the same, 15.0% in 1969 compared with 15.8% in 1968. In Lindsay District, there was a slightly higher hunter success of 14.5% compared with 13.4% in 1968. Parry Sound had a rather lower success, 20.7% in 1969 compared with 22.4% in 1968.

Farther north, the story was much the same. About a third less deer were checked at Sault Ste. Marie than in

1968. On the Sudbury District mainland, more hunters were around, but the few deer resulted in even lower success than in 1968. At North Bay, the 8.1% success was about normal for recent years. There were fewer hunters and more signs of deer reported.

The hunt on the Bruce Peninsula was about the same as in recent years, the 10.5% success being nearly identical with that of the last two years.

On Manitoulin Island, hunters passing the Little Current checking station during the 1969 deer season were almost exactly as successful as those in 1968 (22.2% with deer in 1969, 22.8% in 1968). Similarly, the number of days required for a hunter to kill a deer was 19.5 in 1969 compared with 18.7 in 1968. But there were fewer hunters and, therefore, fewer deer taken. The number of hunters decreased to 3,417 in 1969 from 3,776 in 1968, and the number of deer taken declined to 757 in 1969 from 860 in 1968. In Dawson and Robinson Townships, hunter success was 24.8%, a little above the average for Manitoulin. These two townships provided 53.9% of the deer kill recorded for the entire island.

## DEER RANGE MANAGEMENT

To improve the condition of existing deer range, it is necessary to provide enough high-quality food near available evergreen shelter to support present populations of deer through the critical winter season. The best deer range includes brush and young hardwoods for food, interspersed with patches of older evergreen trees for shelter. This arrangement can be brought about by introducing logging operations near conifer stands already used for shelter by the deer, and leaving the evergreen trees standing. Thus, the Department encourages such operations in deer wintering areas. However, in many places there are not enough merchantable hardwood trees for such operations. In these places, the Department hires men to cut non-merchantable trees. Such cutting produces food by the sprouting of coppice growth from the stumps.

During the past winter, snow conditions became severe about the 1st of February, and emergency relief measures replaced some routine cutting operations. This meant making trails with tractors and snowmobiles from sheltered areas, where deer had gathered, to places where food was abundant. The cutting of hardwoods, carried out to stimulate the regrowth of more food for deer along main travel trails, was timed to supply immediate food from tree tops as well. Because of the emergency work, the annual cut under this program was reduced from about 3,000 acres during the past two years to about 2,000 acres in 1969.



To produce additional winter range, it will be necessary to provide new areas with adequate evergreen shelter, since deer will not stay in an area during winter unless this shelter is available. Some new yards might be created by cutting for food near shelter which is not now being used, but it is mostly a matter of new shelter required. The quickest way to get it is to find areas where small evergreen trees have been suppressed by larger hardwoods and cut some of the latter. Two release cuts of this kind were carried out during the year, one in Parry Sound Forest District and one in Tweed Forest District.

Where no such advanced growth is present, we must start with even smaller evergreens. A trial planting of 1,000 hemlock seedlings was initiated in Parry Sound District in 1969, and so far the results are encouraging. In Pembroke District a new effort at combining deer range management and timber production resulted in a planting of 100,000 white spruce seedlings. Some smaller plantings of white pine were tried in North Bay District. Although these species do not provide as good deer shelter as hemlock, they are used to some extent by deer and thus provide the opportunity for dual purpose programs.

*Woodland caribou, a sensitive ecological indicator, with a population estimated at 15,000 in the northern quarter of Ontario. As from prehistoric times, a small proportion are harvested annually for much needed food and fibre by Indians in remote settlements. Photo by D. W. Simkin.*



## BROWSE PRODUCTION (acres), 1969-70

Forest District

	Net Area Treated	Winter Range Affected
Sault Ste. Marie .....	123	2,700
Sudbury .....	150	33,100
North Bay .....	333	15,200
Parry Sound .....	287	6,100
Pembroke .....	482	55,600
Lindsay .....	288	8,400
Tweed .....	346	500
Lake Simcoe .....	12	2,500
Lake Huron .....	105	17,300
TOTAL .....	2,126	141,400

## MOOSE HUNTING AND MANAGEMENT

The purpose of moose management in Ontario is to provide recreational opportunities and economic benefits from this resource. Although many people enjoy looking at moose, especially during summer, our major benefits are derived from the recreation and monetary returns generated by the hunting season.

The annual mailed survey of moose hunters was again conducted with the assistance of an electronic computer. If the questionnaires were not returned by the hunters, reminder notices were automatically sent out, and the results of the survey are in process of being analysed.

Moose hunting was alternately poor and good during October according to preliminary reports. More hunters were around than in 1968, and there were plenty of moose available for the hunters, but unfortunately, the weather affected the hunt adversely. Where weather was favourable, hunters had good success, but where rain set in, fewer moose were taken.

In many areas, the first week was very rainy, discouraging hunters from going afield and making hunting difficult. Then the weather cleared and hunters, flocking to take advantage of the improved weather, were well rewarded with moose. The rain came on again during the third week, and again relatively few moose were taken. Following freeze-up, some better hunting occurred during the remainder of the month.

In Kenora and Sioux Lookout Forest Districts, hunting conditions were exceptionally bad during the first week due to four weeks of rain before the season. Water was



very high and many back roads were impassable. Yet, by the end of the month, nearly 500 moose had been examined on the Red Lake Road, giving 37% success compared with 32% in 1968. An earlier comparison showed 385 moose removed from the Red Lake Road in 1969 during a period when only 343 were checked in 1968.

Nearly a thousand moose were taken across the border at International Falls and another 700 at Pigeon River by non-resident hunters. This latter figure was below the number exported in 1968 but above that of 1967. Apparently the poor weather discouraged many hunters who left early, for 80 fewer moose were exported during the third week of the season than in the same period of 1968. On the Black Sturgeon Road, hunters were up to 2,014 in 1969 from 1,936 in the previous year, and moose were down to 197 in 1969 from 237 in 1968.

Unlike northwestern Ontario, water was relatively low in the northeast and weather was reasonably good during the first week.

In Geraldton District, the harvest of moose was up slightly, and the number of hunters up more. This was also true in Kapuskasing, Chapleau and White River Districts. At the Shabotik Road in the latter District, 59 moose were checked compared with 45 in 1968. Hunters were also more numerous, comprising 1,200 in 1969 as compared with 1,010 in 1968.

This good hunting was also reported from Cochrane District and the Englehart area of Swastika District. But in the remainder of Swastika District, southward toward North Bay and across to Sault Ste. Marie, unfavourable weather again interfered with the hunting.

Many residents compensated for the slow start by returning to the hunt after snow on the ground became a helping factor. Conditions were good for power toboggans, and the late season success was better than usual.

Although reliable facts concerning hunting and numbers of moose are of utmost importance in managing our moose herds, the long term welfare of the moose depends largely on the condition of their range, that is, the forest environment in which they live. Food is of prime importance. Some years ago, plenty of food was provided by the forest regeneration following outbreaks of spruce budworm and numerous forest fires which destroyed the standing forest trees. But recently, there have been few budworm infestations, and numbers of forest fires are greatly reduced. The major forest disturbance producing moose food has become pulp cutting.

What effects do forest practices have on the moose range? To find out, a new program was launched during the spring and summer in which crews of students were hired to set out plots and count plants in areas where various forest operations were being carried on. Plots were established in large jack pine clear-cut areas. The results of aerial herbicide applications were examined. The intensive treatment known as scarifying, which consists of knocking over brush and small trees with large machines and clearing patches down to mineral soil, to provide better seed bed for forest trees, was examined and plots were established in treated areas with comparable control plots in untreated areas. In addition, burned areas of varying ages were examined to find information on how long they continued to provide food for moose.

This was merely the beginning of a long term program of fact finding concerning changes in the forest and their effects on moose. When adequate information is at hand, it will be possible to integrate moose range management into forest management plans and procedures, so that our forests of the future will not only grow good trees but support optimum moose populations as well.

## BEAR HUNTING AND MANAGEMENT

The goal of black bear management is to provide opportunities for recreation and economic benefits to the people of Ontario from this resource. The continued success of our management program is indicated by the increasing sale of spring bear hunting licences. Sales of licences to residents have increased rapidly from 813 in 1966 to 1,359 in 1969. Sales of non-resident licences have increased even more rapidly from 3,960 in 1966 to 9,400 in 1969. Since most non-resident bear hunters spend \$80 to \$90 on their hunt, the exchange of money generated by spring bear hunting in Ontario is fast approaching the million dollar mark.

In addition, many people hunt bears along with deer or moose in autumn. The report of 48 bears shot by organized deer hunters in Tweed District alone during 1969 is about average for the past ten years. The export of bears from northwestern Ontario has been increasing from 124 in 1966 to 248 in 1969. It is evident that bears are increasingly important as a supplement to deer and moose hunting.

Meanwhile the nuisance bear problem continues to fluctuate. After a very high number of nuisance bears were shot during the summer of 1968, there was a sharp drop in most districts during 1969 with only a few districts reporting bears still numerous.

This problem may relate to the abundance of wild berries. Bears, looking for food, may range much farther when berries are scarce and thus come in more frequent contact with humans. Steps are being taken to reduce the numbers of nuisance bears shot by broadening our program of trapping, drugging, removing and releasing these bears. Very few bears return to continue making trouble. Thus, the waste of our resource is reduced in a humane way.

A few bears are killed on the highways each year. One in Kapuskasing District caused \$600 damage, although most motor accidents involving bears result in no more than about \$100 damage. Since fewer animals are involved as well, highway accidents are not nearly the problem with bears that they are with deer and moose.

## UPLAND GAME MANAGEMENT

Upland game management objectives include regulations designed for maximum use of resident small game species, several of which are usually under-harvested; encouragement of management practices which increase the production of small game; and to provide accurate predictions relative to the annual availability of small game.

Upland game hunting continued to be a popular pastime in Ontario. For the 1968-9 hunting season, 360,192 resident small game and summer hunting licences and 12,900 non-resident small game licences were sold.

### RUFFED GROUSE

For the second year in a row, grouse populations across Ontario were at low levels, and it was obvious that grouse were at or near the bottom of their nine-year cycle.

Lower hunter success was reflected in bag check information; the average number of grouse shot per 100 hours by woodland hunting across the Province for the years 1966 through 1969 was 47, 46, 32, and 26, respectively. Similarly the average number of birds shot per hundred miles by those hunting along bush roads was 6.5, 9.4, 4.9, and 2.1, for the same period. Grouse were at a low ebb in their nine-year cycle in 1969. One thing is certain however. The cycle will continue, and it is extremely likely that improved grouse hunting will be experienced in 1970 in most areas.

### SHARPTAILED GROUSE

After two consecutive years of migration from the lowlands of James and Hudson Bays to more heavily populated areas, populations of northern sharptailed grouse "stayed-put", and no extended seasons were established.

Prairie sharptailed grouse were available in good num-

bers in northwestern Ontario. Fort Frances Forest District personnel live-trapped and transferred 31 prairie sharp-tailed grouse which were released in Grenville County. This was the second introduction of these large game birds into southern Ontario in recent years. There is evidence that the first introduction in the Lindsay Forest District is gradually becoming established.

### RING-NECKED PHEASANTS

Populations of ring-necked pheasants continued to improve across the main breeding range in counties north of Lake Erie, but land use practices continued to remove habitat essential as winter and nesting cover, and the long-term outlook for pheasants is not bright.

Sportsmen's clubs and regulated townships continued to stock birds provided by the Department. Those which raised birds to adult size before release provided the best return to the hunter. The Department produced 40,050 chicks, 15,450 poults and 6,732 adults. The latter were used on public hunting areas. In addition, 2,210 spent breeders were released in late spring across the southern counties.

The adult bird stocking program showed its worth in Lake Huron Forest District, which over the whole season showed a hunter success ratio of four hours per bird taken. This compares to 4.4 hours and 5.6 hours per bird in the previous two years. Release of younger pheasant stock is much less successful in putting birds in the hunter's bag.

Natural reproduction was lower in Lake Simcoe District. Success of pheasant hunters there fell 27 per cent from the previous year to 0.5 birds per gun-day.

### HUNGARIAN PARTRIDGE

The best Hungarian partridge hunting continued to be provided by the eastern counties of the Province. Huns were not as abundant as in 1968, however, and birds bagged per hunter-day fell to 1.4 from 2.9 the year before. Causes of periodic declines in Hungarian partridge populations are not known; it is possible that this bird undergoes cyclic fluctuations of scarcity and abundance in Canada much like the ruffed grouse or varying hare.

Kemptville District staff live-trapped partridge from un-hunted areas, and a release of 45 was made in Sombra Township, Lambton County, on March 11, 1969. It is hoped to establish huntable populations of "Huns" in every suitable area of southern Ontario.

### SQUIRRELS

Grey squirrels continued to supply good recreation in southern Ontario for the relatively few hunters who pursue them.





*Giant Canada geese are being raised at many locations to build the future breeding stock of wild goose populations in southern Ontario. Above: these families are located in the goose management unit at Holiday Provincial Park. Photo by D. W. Simkin.*

About 40 fox squirrels, until now resident in Ontario only on Pelee Island, were obtained from Michigan and released near the border of Lambton and Kent Counties. These squirrels, larger than the grey, use more open-brown timber habitat and should prove an interesting and sporty game species if they become established. They compete but little with the grey squirrel, and they have little tendency to interfere with agriculture, which makes them most desirable immigrants.

## RABBITS AND HARES

The European hare (or jack), the cottontail rabbit, and the snowshoe (or varying) hare produce much recreation, particularly in heavily hunted southern Ontario.

The varying hare, a cyclical species, continued to increase over much of the Province. Only in certain areas, and in eastern Ontario in particular, is this species sought by hunters.

Cottontails, European hare and varying hare were slightly less available than in 1968. Lake Simcoe Forest District checked 426 "rabbit" hunters who had taken 0.4 pieces of game per hunter. It took an average time of 8.6 hours to take one of these three species. This compares with 0.53 units of game and 6.2 hours per rabbit bagged in 1968. Census work on rabbits and hares in Lake Huron Forest District also indicated that cottontails and jacks were slightly less abundant than the previous year.

## WOODCOCK

The popularity of this migratory game bird is increasing each year. Because of its growing importance as a game species,

breeding ground surveys of singing males were made for the second consecutive year on 72 randomly selected routes across southern Ontario. The average number of woodcock per route increased from 6.7 to 7.5 over the previous year.

Federal surveys of migratory bird hunters estimated that 76,232 woodcock were taken in Ontario during the 1969-70 season, compared to 55,952 the year before. The average bag per successful hunter was 6.1 woodcock.

## WATERFOWL MANAGEMENT

Waterfowl management objectives in Ontario include the maintenance of populations at or near levels which occurred in the 1955-8 period, and the provision of sustained quality recreation for hunters and non-hunters alike.

The season was an extremely good one for those hunting waterfowl in Ontario. Over the season, 123,891 residents and 9,081 non-residents purchased migratory bird hunting permits. Estimated total harvests of ducks in Ontario was 928,112, an increase of about 20 per cent over 1968. The

harvest was not quite as large as in 1967 when slightly over a million ducks were taken in the Province. Mallards, black ducks, wood ducks, blue-winged teal, green-winged teal and ring-necked ducks, in that order, were the main species taken.

Opening day hunting success for 1969 was above average, and all Forest Districts in southern Ontario reported average bags of over one duck per hunter. Some of the better areas were Swastika Forest District at 1.8 ducks per hunter, southern Lindsay District at 1.7 birds per hunter, and Tweed Forest District at 1.5 birds per hunter.

The year 1969 will be remembered as the "goose year" in southern Ontario. Both Canada geese and snow geese stopped over in most unusual numbers, across much of southern Ontario, on their journey south. The stopover of snows was most unusual since in most years they migrate practically non-stop from James Bay to their wintering grounds in eastern Louisiana. Although no statistics are available, there is little question that southern goose hunters harvested more geese than usual.

Blue and snow geese were in very much better supply on the James and Hudson Bay coasts. Statistics from the Moose River check station and commercial camps on James Bay indicated that the 1969 blue and snow goose kill, at 19,312 birds, was the highest in five years. In addition 659 Canada geese and 4,691 ducks were taken on James Bay.



Pre-season waterfowl banding continued to be an important management activity in following trends and populations where, unlike western Canada, aerial and ground surveys cannot provide good information on such important forest nesting species as the black duck and wood duck. Over 12,000 ducks and geese were banded by the Department in association with private co-operators at over 35 banding stations across the Province in 1969. This was an increase of over 2,000 over the previous year.

## GIANT CANADA GOOSE PROGRAM

For the second consecutive year, giant Canada geese were propagated and held at several game management areas in southern Ontario. The Counties of Wellington-Waterloo, the three southern townships of Grey County, East Luther of Dufferin County and South Dumfries of Brant County were closed to goose hunting. Releases of pairs of giant Canada geese are planned for this area, and ten pairs were released in 1969. Very much larger releases are planned for future years. This program to establish the giant Canada goose, a southern breeding race, was begun in 1968 in association with the Ontario Waterfowl Research Foundation at Guelph. If geese become established in the pilot study area, it is expected that releases of breeding stock will be extended to other southern areas of the Province.

## WILDLIFE EXTENSION PROGRAM

A Wildlife Extension Program was initiated in 1969. A provincial co-ordinator is now on staff, and extension biologists have been located in the Lake Erie, Lake Huron and Lake Simcoe Forest Districts.

The extension program is designed to do three things. Primarily, it will provide access to private land for public hunting recreation; and further, it will encourage wildlife management practices on privately owned rural land and strengthen public appreciation of wildlife resources.

The program is tailored to southern Ontario where the need is most acute for day-use hunting recreational opportunity. Because southern Ontario is for the most part composed of privately owned properties, posting against hunting and restrictive township by-laws have made it continually difficult for the urban hunter to find a place to hunt. Through the Wildlife Extension Program, law enforcement and game management assistance will be offered to landowners as an incentive to allow public hunting on their properties.

Ancaster Township was selected as a pilot project area for the Wildlife Extension Agreement Area approach. Sixty-one landowners signed an agreement with the Minister to allow public hunting on their properties. A deputy conservation officer patrolled Ancaster Township during peak activity periods of the small game hunting season. Safety zones were posted around farm headquarters to restrict hunting access in areas where landowner-sportsmen conflicts often arise. In addition, a zenith phone line was established which allowed Ancaster co-operators to phone the Hespeler office if a problem arose.

This approach to alleviating landowner-sportsmen conflicts was evaluated shortly after the 1969-70 hunting season. Survey results indicated overwhelming approval of the program, on the part of participating landowners.

A new Department publication, entitled Wildlife Land Management for Ontario Landowners, has been released and made available to private rural landowners interested in improving their properties for wildlife. This 24-page booklet covers the major small game species found in southern Ontario wildlife habitat and suggests which management practices landowners can employ readily to encourage wildlife.

## PROVINCIAL HUNTING AREAS

In the Provincial Hunting Area program, our primary goal is to provide a place to hunt in areas where hunting opportunities have become most restricted and the need for public hunting land is most urgent. Other goals are as follows:

- to manage these lands to full capacity;
- to produce a variety of wildlife species;
- to produce a high quality hunting experience;
- to create a public awareness of the value of wildlife in modern society; and
- to encourage alternate uses which do not interfere with the above-mentioned goals such as wildlife photography, dog field trials, and nature study.

## PHEASANT HUNTING AREAS

Pheasants were released in good cover in numbers according to demand on four hunting units in Provincial Parks as well as the Gananoque Provincial Hunting Area this year. In 1969, 4,592 man-days of pheasant hunting were enjoyed in the field. This program has provided hunting in areas where normally this recreational pastime would not occur because four of the five units are outside the native pheasant range. In Presqu'île Provincial Park, pheasant hunting has been discontinued.

## LANDS ACQUIRED FOR WILDLIFE PURPOSES, 1962-70

Area	County	Acres 1962-70	Acres 1969-70
Luther Marsh .....	*Dufferin	969	50
Isaac Lake.....	*Bruce	295	295
Angle Ditch Marsh ....	*Bruce	200	
Johnston Harbour.....	Bruce	4,404	200
Dept. Highways—			
transfer.....	various	1,062	
Holland Marsh .....	*Simcoe	1,298	923
Tiny Marsh .....	*Simcoe	2,246	
Nonquon River .....	*Ontario	2,138	
Wye Marsh .....	*Simcoe	2,417	1,528
Dalton .....	Victoria	100	
Brighton .....	Northumberland	679	56
Murray Marsh .....	*Northumberland	1,598	
Gananoque .....	Leeds	1,046	
Winchester Bog.....	*Dundas	3,600	
Charlottenburg .....	Stormont	258	
Millbrook.....	Durham	188	
Long Point .....	*Norfolk	90	
Dalhousie Tract .....	Lanark	935	935
Lavant Township .....	Lanark	5,200	5,200
Watt Township .....	*Muskoka	145	145
MacCauley Township ..	Muskoka	1,220	
Spence Township .....	Parry Sound	800	800
<b>TOTAL</b>		<b>30,888</b>	<b>10,132</b>

\*Wetland Projects

Of the 5,661 pheasants released at four provincial parks and the Gananoque Provincial Hunting Area, a limited number of pheasants were stocked in good cover at Tiny Marsh in Simcoe County and the Brighton Provincial Hunting Area in Northumberland County to provide opportunities to hunt pheasants outside the natural range of this game bird.

## PROVINCIAL PHEASANT HUNTING AREAS, 1969

	Darlington	Sibbald Point	Earl Rowe	Point Farms	Gananoque
Hunting Area (acres) .....	380	450	425	600	1041
Hunters .....	880	980	690	553	1671
Pheasants Released .....	1375	1471	1092	263	1460
Pheasants Released/Hunter .....	1.6	1.5	1.6	0.5	0.9
Pheasants Harvested .....	1212	1319	990	240	1046
Pheasants Harvested/Hunter .....	1.4	1.3	1.4	*0.4	0.6

\*Bird/hunter low because of the experimental, limited release of pheasants at Point Farms Provincial Park

## PROVINCIAL WATERFOWL HUNTING AREAS

Five waterfowl management units within Provincial Parks were in operation again this year to provide the public with reasonable quality hunting opportunities for ducks and geese.

## PROVINCIAL WATERFOWL HUNTING AREAS, 1969

Name of Area	Acres	Daily Permits Sold (Zone A)	Seasonal Permits Sold (Zone B)
Long Point .....	1750	1369	220
Rondeau .....	9200	803	323
Darlington .....	380	214	—
Presqu'île .....	2170	—	505
Holiday Beach ..	262	—	831
Tiny Marsh.....	2300	508**	—
(Opening Day Only)			

Name of Area	No. of seasonal Hunters Checked	No. of Waterfowl Harvested	Average Bag Per Hunter
Long Point .....	220	(a) 1288 (b) 372	0.9 1.7
Rondeau .....		(a) 1450 (b) 223	1.8 1.8
Darlington .....	226	300	1.33
Presqu'île .....	—	—	—
Holiday Beach ....	3429	1347	0.3*
Tiny Marsh .....	—	580	1.1
(Opening Day Only)			

\*Bird/hunter low because sportsmen are concentrating on harvesting Canada geese

\*\*No daily or seasonal permit required.

Only one minor change in the hunting regulations was in effect this year. At the Long Point Waterfowl Management Unit, shooting hours were from one-half hour before sunrise to noon. The reason for the shorter shooting hours was to give waterfowl an extra half day without disturbance on the marsh to improve the hunt for the next morning. Past records had also shown that most ducks were bagged before noon. These are experimental shooting hours, only, and they are subject to change in future years.

## WILDLIFE MANAGEMENT UNITS UNDER DEVELOPMENT

Of the many land acquisition projects underway in Ontario for various purposes, 12 parcels of land, totaling 16,385 acres, are being actively developed to meet wildlife needs of adequate food and cover. A brief description follows:

*Aylmer Provincial Hunting Area, 555 acres, Malahide Township, Elgin County.* Purpose: To demonstrate that the growing of farm crops and a wildlife crop are compatible and that with suitable management this kind of multiple use is possible. Development, 1965 and 1968: brush piles for cottontail rabbits constructed; and planting of 650 wildlife shrubs and 25,000 evergreen trees as a three-row windbreak on the perimeter of the property. 1969: 10,000 evergreen trees planted for wildlife food and cover.

*Fingal Provincial Hunting Area, 780 acres, Southwold Township, Elgin County.* Purpose: To demonstrate that the growing of farm crops and a wildlife crop are compatible and that with suitable management this kind of multiple use is possible. Development, 1969: 9,000 linear feet of runway was broken up and piled; 30,000 trees and wildlife shrubs were planted; and a dam to impound six acres of water was constructed.

*Puslinch Tract, 500 acres, Puslinch Township, Waterloo County.* Purpose: This area is being developed and maintained as a small game and waterfowl management demonstration area with specific purpose of establishing habitat suitable for cottontail rabbits and ruffed grouse. Development, 1969: 980 wildlife shrubs were planted and several thousand evergreen trees were planted; existing ponds for waterfowl were deepened; and fencing was carried out.

*Luther Marsh, about 10,000 acres, Luther Township, Dufferin and Wellington Counties.* Purpose: Most of the 969 acres in provincial ownership are located within the Crown game preserve at the north end of the marsh. No hunting is allowed in this area. The upland fields are being farmed to provide food crops for waterfowl. Development, 1969: goose ponds and enclosure were constructed; duck breeding ponds were made using explosives; 1,650 wildlife shrubs

were planted; and shoreline was cleared to provide better waterfowl nesting cover.

*Willow Creek Provincial Hunting Area, 4,404 acres, St. Edmunds Township, Bruce County.* Purpose: This area is being developed to provide hunting for small game and deer and also public fishing. Development, 1969: deer yard improvement and stream improvement.

*Tiny Marsh Provincial Hunting Area, 2,246 acres, Tiny Township, Simcoe County.* Purpose: To provide public hunting for waterfowl in the marsh as well as hunting opportunities for small game on the uplands. In addition, opportunities to view and photograph wildlife are available. Development, 1969: one-half-mile access road constructed; 60 waterfowl nesting islands made.

*Wye Marsh Provincial Hunting Area, 2,417 acres, Tay Township, Simcoe County.* Purpose: Similar to that described for Tiny Marsh. Development, 1969: maintenance building and office, fencing, half-mile access road, goose pond, two observation towers and one comfort station.

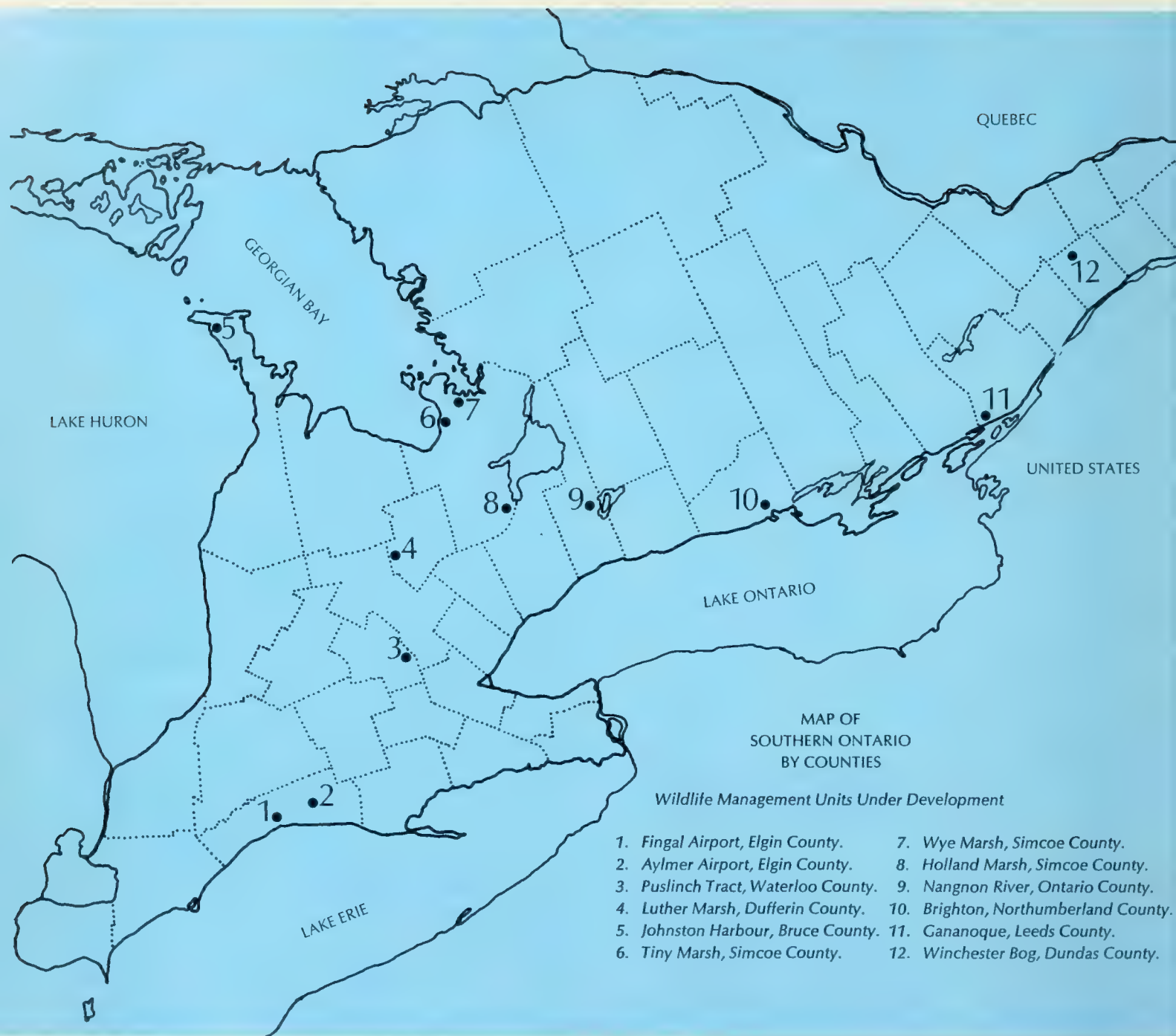
*Nonquon River Provincial Hunting Area, 2,138 acres, Reach Township, Ontario County.* Purpose: To provide public hunting for waterfowl and upland game as well as opportunities to view wildlife in its natural environment. Development, 1969: One parking lot and boat launching ramp. *Holland Marsh Provincial Hunting Area, 1,298 acres, West Gwillimbury Township, Simcoe County.* Purpose: as above. Development, 1969: One parking lot, ponds for waterfowl and one comfort station.

*Brighton Provincial Hunting Area, 679 acres, Brighton Township, Northumberland County.* Purpose: To provide public hunting for waterfowl and upland game as well as opportunities to view wildlife in its natural environment. Development, 1969: access road development, ponds for waterfowl, and one comfort station.

*Winchester Bog Provincial Hunting Area, 3,600 acres, Mountain Township, Dundas County.* Purpose: as above. Development, 1969: fencing, planting of wildlife shrubs, ponds for waterfowl, and access road.

*Gananoque Provincial Hunting Area, 1969.* No. of hunters: 1,671. No. of pheasants released: 1,460. Game harvested: 1,064 pheasants, 15 ruffed grouse, 21 ducks, 23 woodcock, 164 cottontail rabbits, 2 varying hare, 4 European hare, and 5 Wilson snips — a total of 1,298. Units of game per hunter: 0.8.





## FUR MANAGEMENT

The harvest of wild furs throughout Ontario during 1969-70 was comparable to that of the previous season although a decline in prices on most species was experienced. The average price for beaver, based on figures obtained from the sale of 89,000 pelts at the Ontario Trappers' Association Fur Sales Service at North Bay, was down approximately 25 per cent from \$20.16 in 1968-9 to \$15.06 in 1969-70. The average price paid for mink declined from \$11.95 in 1968-9 to \$6.78 in 1969-70. However, the mink harvest increased over the previous year, an indication that this species is recovering from low population levels of the mid-Sixties.

Trapping activities were limited to some degree in many areas of the Province due to poor travelling conditions resulting from deep snow and slush on lakes and rivers. The Department continues to census beaver populations and direct trappers to those areas where densities are at levels which will provide an equitable return to them. No major disease outbreaks occurred in wild furbearers during the year.

Beaver continue to cause some problems in rural and cottage areas throughout the Province. Trappers are encouraged to harvest nuisance animals early in the season to alleviate flooding conditions and prevent property damage in these areas.

Fur royalties paid on 810,713 pelts, exported from and processed in Ontario up to June 30, 1970, amounted to \$251,595. The estimated value of this fur was \$3,631,983, a decline of \$529,558 from the previous year. The price decline experienced in 1969-70 is attributed to the tight money conditions and high interest rates experienced in Europe during the past season.

## PREDATOR MANAGEMENT AND CONTROL

The function of the predator control unit is to assess the degree of depredation caused by wildlife predators. It also implements or provides assistance in control programs where it has been determined that their presence is detrimental to the domestic livestock industry or to maintaining desirable population levels of other wildlife species.

Department staff investigated 69 instances of predation on domestic and wildlife prey species. A total of 53 control programs were established. Farmers, who experienced losses of domestic stock to wildlife predators, were assisted by Department Officers in establishing control programs. As a result of these programs, 38 timber wolves, 32 coyotes, 19 bear and 11 dogs were removed from the problem areas.

Predator control training courses were conducted in the Forest Districts of Sudbury, Sault Ste. Marie, Lindsay, Lake Simcoe and Lake Huron. Twenty-nine Department employees received on-the-job training, and 189 farmers and trappers attended extension training workshops.

During 1969, a total of 1,619 timber wolves, 2,016 coyotes and 77 hybrids were bountied in the Province. The number of timber wolves bountied annually has remained relatively constant for the past number of years. Coyotes have shown a gradual increase in numbers bountied each year since 1960. This increase may be related to the low population of foxes as the two species compete to a degree for the same food and space.

Payment of bounty claims amounted to \$69,996 during the fiscal year, compared with \$62,025 in the preceding year.

## FUR FARMING

Declines ranging from 15 to 20 per cent for all types of ranch mink were experienced in the opening sales of the 1969-70 mink pelt market. While buyer attendance was good, demand was selective, and it was quite obvious that buyers were purchasing goods to meet only immediate needs. The initial sales recorded some 70 per cent clearance as compared with 85 to 90 per cent clearances last year.

There were indications that further declines could be expected in the sales in January, February and March, and buyers were fearful of purchasing quantities of pelts that they might not clear through the manufacturing levels before the next auction sale, when the same quality goods might be purchased at cheaper prices.

As was anticipated, declines occurred in the sales in February, March, April and May for all types of mink, ranging from 15 to 40 per cent as compared to the 1968-9 sales. By the end of May, however, 90 per cent of the Canadian mink crop was sold.

Despite the fact that 60 to 70 per cent of the crop was sold in the initial sales before the drastic decline in the market occurred, the grand average selling price for 90 per cent of the ranch mink crop fell to \$11.32. According to the Ontario Fur Breeders' Association, this average is about \$1.55 below the costs of producing a mink pelt in Ontario.

Due to the low returns, many mink ranchers in Canada, and particularly in the United States where the bulk of their crop was not offered before the drastic decline in the market occurred, are being forced to discontinue business. It is estimated that declines in pelt production for the 1970-71 season may reach 20 per cent in Canada and as high as 35 to 40 per cent in the United States. These may be offset to

some extent by additional pelt-outs when the pelts of breeder mink will be offered for sale.

The low prices and inactivity in the mink pelt market can be attributed to the economic conditions which caused the present slump in the stock market in the United States, the largest mink consuming country in the world, and to a lesser extent in the Canadian market. The tight money situation, with high interest rates, has had an adverse effect on the brokerage, manufacturing and the wholesale branches of the industry which operate to a great extent on credit.

The efforts of the National Board of Fur Farm Organizations, have been redoubled in their attempts to obtain quota legislation on the importation of mink pelts into the United States. Any restrictive import measure would adversely affect Canada and particularly Ontario, the largest fur producing province, because most of the top quality wild mink, and a good percentage of fine quality ranch mink produced in Canada, are exported to the United States. Developments are being closely watched by the Canada Department of Industry, Trade and Commerce and Canada Mink Breeders.

In anticipation of a poor pelt market and for economic reasons, the number of breeder mink kept on Ontario ranches as of January 1, 1969, remained virtually the same as for January 1, 1968. The increase in the number of mink pelts produced in 1969, as compared to 1968, is attributed to the small increase in the number of breeders kept and the number of breeder pelts placed on the market due to ranchers discontinuing business. From information obtained from the Fur Farmers' Reports, the Provincial production per female kept was calculated to be 3.57 and the mortality from all causes was 2.44.

In December, 1969, 51 Ontario fur farmers discontinued business due to the low pelt prices. It is obvious that unless there is a dramatic up-swing in the market where ranchers can at least recover production costs, there will be a further serious contraction of the industry in the Province in the next year.

The small production of ranch-raised fox pelts sold to good advantage with the present demand for all long-haired furs. Large quantities of these types are being used in the manufacture of "fun furs" and sportswear.

The incidence of disease on Ontario fur farms was minimal in 1969. Six cases of distemper, four cases of tuberculosis, three cases of pseudomonas, and one case of plasmacytosis were diagnosed at the Ontario Veterinary College, University of Guelph. The largest loss due to distemper was 326 mink on a ranch where they had not been vaccinated. The

loss due to pseudomonas was kept to a minimum by the prompt use of vaccine stored at the College for this purpose. The one case of plasmacytosis is not representative of the status of this disease on Ontario ranches. Traces of this disease can be found on most ranches. However, as ranchers test for this disease without reference to the College, no accurate record of its prevalence is known. The disease is controlled by killing those mink that show positive to the test.

During 1969, a total of 387 Fur Farmers' Licences were issued; of these 358 were renewals, 27 were for newly established fur farms, and two licences were issued with retroactive provisions to legalize the operation of unlicensed farms in the previous year.

## FIELD SERVICES

This is a service unit providing liaison between fish and game management and the preparation of regulations, amendments to regulations and The Game and Fish Act, 1961-62, and amendments. It is responsible for law enforcement programs, the training of conservation officers, and the maintenance of seizure and prosecution records. In addition, records of angling and hunting licences are maintained in a Central Licence Bureau incorporating hunter and angler surveys for management purposes and law enforcement. Hunters and anglers may also be serviced in the matter of replacing lost licences by this bureau. Hunting licence examinations are a responsibility of Field Services in co-operation with the Provincial hunter training program.

## LAW ENFORCEMENT

Where education programs fail to obtain the necessary co-operation of the public, charges may be laid. The objective of preventing violation can sometimes be achieved by issuing warnings. Where court action results, a high standard of law enforcement training is essential.

A Provisional Summary of the Big Game Seasons was provided seven months in advance of the open season, followed by a more comprehensive Summary of the Regulations and Seasons several weeks prior to the commencement of fall hunting. In addition to these two hunting publications, consolidated office copies of The Game and Fish Act, 1961-62, and the Ontario Fishery Regulations, 1969, were made available for distribution to law enforcement officers, courts, legal counsel and the public.

The training of conservation officers and others, concerned with the enforcement of provincial and federal statutes, is continuing with a total of thirty-eight officers and other personnel receiving in-service training during the year at Nym Lake Staff House, Fort Frances Forest District and the Ontario Forest Technical School, Dorset.



## HUNTING LICENCE EXAMINATIONS

The hunting licence examination program has just completed its second year with a total of 22,474 applicants examined in 1968 and 23,415 examined in 1969, an increase of 941 applicants. The twenty-one Forest Districts reported the following applicants examined in 1969.

Lake Erie .....	3,931
Lake Huron .....	3,444
Lake Simcoe .....	4,184
Lindsay .....	881
Tweed .....	1,397
Kemptville .....	1,824
Pembroke .....	394
Parry Sound .....	474
North Bay .....	669
Sudbury .....	1,354
Sault Ste. Marie .....	818
White River .....	153
Chapleau .....	159
Swastika .....	518
Cochrane .....	521
Kapuskasing .....	416
Geraldton .....	152
Thunder Bay .....	1,135
Fort Frances .....	315
Kenora .....	423
Sioux Lookout .....	274
<b>TOTAL .....</b>	<b>23,436</b>

Failure rates were highest in southwestern Ontario at 22 per cent while the remaining eighteen districts had a failure rate of only 8.4 per cent, with a provincial average of 10 per cent. This is an improvement of 3 per cent over the average of 1968.

Total accidents for 1969 numbered one hundred and thirty, an increase over the previous year. However, when based on the rate of accidents per number of licences sold, which gives consideration to the yearly increase in hunters, there is a slight decrease over the yearly average for the past nine years of 20.3 per 100,000 licences.

## CENTRAL LICENCE BUREAU

The Central Licence Bureau has been in operation since 1968. From that time, copies of licences sold to hunters and fishermen have been coming in at a steady pace. There are now approximately 1,200,000 hunting licences on record and 1,500,000 angling licences.

These licences, with the names and addresses on the licensees, serve as the basis of mailed surveys to hunters and fishermen in Ontario. Each fall, a survey is taken of the moose and deer hunt in Ontario. All surveys do not directly involve the public. Valuable information, such as age classifications and origin of the sportsman, can be obtained by sampling for information contained on the licence.

The Bureau assists our conservation officers and the police in matters of law enforcement through the "identification badge" number system. Landowners can identify hunters on their lands through this system.

The Central Licence Bureau also serves the public by verifying a hunting or fishing licence purchase so that a new or duplicate licence may be purchased in the event the original is lost or stolen. Each year, 500 applications for verification are processed; of these, some 350 come in late September and early October.

## SEIZURES AND CONVICTIONS

The Seizures and Convictions unit recorded 5,164 offences with 4,654 convictions registered. The remainder were dismissed or withdrawn, or are incomplete to date. This is again the highest number of offences on record for a single year. The annual increases being experienced since 1962 are probably the result of increasing numbers of hunters and anglers and are following parallel courses.

*Hungarian partridge, live-trapped annually in southeastern Ontario, are released into suitable habitat in southwestern Ontario. Photo by J. B. Dawson.*



## SEIZURES AND CONVICTIONS

	1965-6	1966-7	1967-8	1968-9	1969-70
Number of Offences .....	2,581	2,942	3,404	3,557	5,164
Number of Convictions .....	2,347	2,626	3,239	3,489	5,219
Cases Dismissed .....	64	93	105	183	151

## WITHOUT A LICENCE (CONVICTIONS)

Activity	1965-6		1966-7		1967-8		1968-9		1969-70	
	No.	% Frequency	No.	% Frequency	No.	% Frequency	No.	% Frequency	No.	% Frequency
Fishing without licence .....	106	4.6	204	7.7	178	14.9	237	6.5	908	19.5
Hunting without licence .....	360	15.3	443	15.9	467	23.1	589	16.0	497	10.6
Trapping without licence .....	6	0.2	5	1.2	14	41.1	32	0.87	27	.58
	472	20.1	652	24.8	659	20.3	858	23.37	1432	30.68

## VIOLATIONS, 1969-70

1. Angling with more than two lines .....	321
2. Possession of overlimit of fish .....	542
3. Taking fish by means other than angling .....	211
4. Taking fish during closed season .....	134
5. Possession of fish during closed season .....	79
6. Possession of spear .....	68
7. Miscellaneous, including fishing without licence .....	1,188
Total, Fishing Violations .....	2,543
1. Possession loaded firearm in vehicle .....	470
2. Hunting during prohibited hours and jacklighting .....	340
3. Possession loaded firearm in power boat .....	152
4. Hunting in closed season .....	83
5. Possession of game in closed season .....	24
6. Hunting protected birds .....	105
7. Failing to wear a back patch .....	381
8. Miscellaneous, including hunting or trapping without a licence .....	910
9. Careless hunting .....	18
Total, Hunting Violations .....	2,483
Total Violations .....	5,026

# FISHERIES SECTION

## SPORT FISH AND HATCHERIES

The responsibilities of this Unit are to manage and develop the natural fisheries resource; to augment it where possible and desirable by the planting of hatchery fish and the development of additional fisheries; and to encourage wise use of the resource.

To accomplish these objectives in conjunction with field staff, Unit personnel are involved in the planning and co-ordination of programs to assess the fishery and its degree of utilization by anglers; to determine the effectiveness of fish plantings; to establish angling seasons and regulations and to test their validity; to initiate habitat improvement; to study fisheries problems and to evaluate remedial action; to provide public access to natural waters and to acquire and develop public fishing areas; and to dispense information and to promote the sports fishery.

The operation of an extensive system of fish hatcheries is an important part of fish management in Ontario. Production and distribution of fish stocks, modernization of the hatchery system, and the application of new fish cultural techniques are involved in the program.

### ANGLING REGULATIONS AND SUMMARY

Numerous, minor amendments to the Ontario Fishery Regulations were enacted to solve specific management problems or to permit more liberalized fishing in keeping with the status of the resource.

Winter fishing for brook trout in the streams and ponds of St. Joseph Island was prohibited by placing the island in Division 2.

Algonquin Provincial Park was consolidated as Division 13, rather than Divisions 13 and 14.

Winter fishing for brook, brown and rainbow trout was established for the southerly portion of the District of Muskoka by placing it in Division 7.

That portion of Crowe Lake in the County of Peterborough was deleted from Division 6 and placed in Division 7.

Winter fishing for brook, brown and rainbow trout in Division 10 was extended two months by establishing the opening date as January 1st.

The open season for rainbow trout in Divisions 1, 2, 16 and 17, and in the special rivers having an extended fall season, was extended to December 31st.

The open season for bass and maskinonge in Division 12 (Ontario - Quebec border waters) was extended to March 31st.

An "all year" open season on maskinonge was established for Divisions 20 and 24.

The over-all closing date for fishing in Algonquin Park was extended from October 15 to November 30.

The daily catch limit on lake trout was reduced from five to three in Division 19 and in that part of Division 16 lying north of the French and Mattawa Rivers.

Sauger were included with blue pickerel and yellow pickerel relative to the daily catch limit.

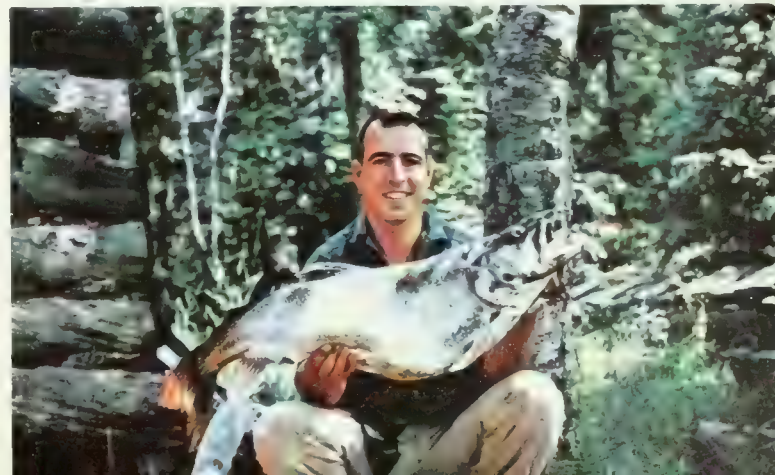
The daily catch limit on brook trout was established as ten fish, or five pounds plus one fish, in the following counties which constitute the Lake Huron Forest District: Brant, Bruce, Grey, Halton, Huron, Oxford, Perth, Waterloo, Wellington and Wentworth.

Blue pickerel and sauger were included with yellow pickerel relative to open seasons for angling.

The open season on brook and brown trout was established from January 1st to September 15th in the following areas: Eugenia and Bells Lakes in the County of Grey; Cameron and Gillies Lakes in the County of Bruce; and Pinery Park Pond in the County of Lambton.

The Summary of the Ontario Fishing Regulations was improved by the addition of further relevant information, by the deletion or clarification of wordy passages, by the re-arrangement of material, and by effecting a general tidying up of the format.

*A thirty-pound lake trout taken from Saganaga Lake, Thunder Bay Forest District. Photo by C. E. Monk.*





## LICENCES

Revenue from the sale of angling licences increased by a resounding 73 per cent as a result of significant changes in the licensing fee structure. A slight reduction (444) in the number of non-resident seasonal licences sold was more than compensated for by the higher licence fees and a substantial increase (9.8 per cent) in the sale of non-resident three-day licences.

The fiscal year 1969-70 was the first full year in which the new resident angling licence was in effect. The number of licences sold was 603,670.

In comparison, the sale of domestic or sport fishing licences is of minor importance. Some highlights, however, are worthy of mention. The sale of non-resident smelt licences and domestic dip-net licences increased 25 and 30 per cent respectively, and all licences in this group showed marked increases in sales.

## EXTENSION

In 1968, a formal program to guide and assist in the development of fisheries resources on private lands was started with the appointment of one Head Office biologist and two field extension biologists. In 1969, an additional field position, in Lake Erie Forest District, was established.

While advice and services may be directed to private landowners for the creation and management of ponds or for stream improvement, the program is very concerned with public benefits. The obtaining of public access through purchase, easements, agreements and better landowner-

*Lifting a pound net on Georgian Bay. Photo by F. P. Maher.*



angler relations, and the preservation of habitat, particularly water quality, migration routes and spawning areas, are prime concerns. Field staff are currently developing improvement techniques on Crown lands and preparing plans for private land projects.

## PROVINCIAL FISHING AREAS

Ten pond areas near urban centres were operated on an intensive basis to provide public fishing for trout. The Hill Lake Hatchery in Swastika District and the George Challies area in Kemptville District were added to the list in 1969.

The Challies area was stocked with 1,947 rainbow and 500 brook trout for the first time in 1969. Returns of tagged fish indicate 69 per cent of the fish were harvested by the spring of 1970. Estimates for May and June alone indicate 1,335 angler visits, totalling 5,920 hours.

Estimates for the Cornwall Recreation Area, covering January through September, indicate 5,814 angler visits, totalling 16,813 hours, with 5,691 trout caught.

Mount Pleasant Provincial Fishing Area again recorded the highest estimates with 28,120 angler visits, totalling 65,222 hours, with 22,500 trout caught.

## WATER QUALITY STUDIES

In 1969, the Department, in co-operation with the Ontario Water Resources Commission, expanded its efforts to detect and reduce water pollution in the province. To provide the direction for the program and to maintain liaison with other government agencies in the pollution control field, a Water Quality Control position was created in Head Office.

The 1968 pesticide monitoring program was directed to the Muskoka Lakes, Lake Simcoe and Bay of Quinte, which had warranted further investigation to provide baseline data on the levels of pesticides in various fish species because of widespread use of DDT in these areas over the years, and where recent legislature has almost entirely prohibited its use for black-fly and mosquito control.

Also, in 1969, the Department, in co-operation with the Ontario Water Resources Commission and the University of Toronto, undertook a limited program of fish sampling and analysis to determine background levels of mercury and to consider the possibility of mercury pollution in Ontario water systems.

In recent years, the Department has become increasingly concerned about the possible effects to fisheries from heated water discharges at several large thermal Generating Stations being constructed on the Great Lakes. To consider the various possible effects of these heated discharges, a joint study, involving Ontario Hydro, Steel Company of Canada,



*A lake survey crew member uses an echo sounder to obtain the bottom contours of a lake. Photo by F. P. Maher.*

Ontario Water Resources Commission and the Department, was begun in 1969 on Lake Erie at Nanticoke where a large station is under construction, and where plans are under way for the construction of a large steel making industry.

The Department's campaign during 1968 to ensure proper garbage disposal by winter fishermen, through the use of plastic litter bags, on selected waters was so encouraging, that the program was expanded province-wide during 1969 to help keep our lakes and rivers free of domestic wastes.

## NETTING CREWS

Department netting crews are stationed at Maple in southern Ontario and at Thunder Bay in northwestern Ontario. Their duties are to provide netting gear for the use of District personnel on field projects and to maintain such gear by repair or replacement. They also instruct and assist field personnel on netting projects and actually carry out some of the more difficult ones.

In 1969, the staff at Maple actively participated in the collection of lake trout and yellow pickerel eggs for hatchery purposes. They also provided numerous species of live fish for display at the Toronto Sportsmen's Show and the Canadian National Exhibition. In addition, a total of 85 trap and pound nets and eight retainers was loaned out to nine forest districts, two universities and the Department's Research Branch. As a result, some 220 pieces of used netting had to be overhauled, mended, rebundled and stored. A

total of 25 new trap nets and two retainers was constructed in 1969.

The netting crew at Thunder Bay was actively engaged in 11 field projects involving fish tagging, spawn collection, lake surveys, fish sampling, fish transfer and the demonstration of impounding gear. In addition, a total of 18 trap nets and two seines was loaned out to five forest districts. All gear in stock was overhauled and repaired; one new net was constructed; and three nets were rebuilt with modifications.

## FISHERIES MANAGEMENT UNITS

Each Unit, although part of a forest district, has more precise responsibilities for large, important lake systems which require intensive inventory and management.

Plans were underway to establish new Units on Lakes Superior and Huron where a need was indicated for co-ordinated plans of fisheries management involving the activities of several forest districts.

*Lake St. Clair.* This Unit, established in 1968, moved into new headquarters, formerly a commercial fishery, near the mouth of the Thames River. Previous studies were reviewed and existing data summarized. Records of yellow pickerel tagged in the Thames River during the spawning run indicated a gradual dispersal of these fish into Lake St. Clair northwest as far as the St. Clair River and Lake Huron. A summer creel census, involving 5,634 anglers, indicated a total angling effort of 66,407 man-hours producing a catch of 53,972 fish. Lake St. Clair has an active ice fishery. From interviews of 1,492 anglers, an estimated 532,880 fish were caught, mostly yellow perch, from an estimated effort of 91,560 angler-hours. This is a catch of 5.8 fish per man-hour.

*Lake Nipigon.* Following establishment of this Unit in 1968, and a review of existing data from previous investigations, surveys were conducted of tributary streams to evaluate their potential for spawning habitat of game fishes such as yellow pickerel and brook trout. Spawning pickerel were tagged in some of these unsurveyed streams as well as those in Ombabika Bay. Nine individual bays on the lake were sounded and examined for spawning habitat and standing crops of young-of-the-year game fish. Initial investigations began in the Sturgeon River to determine the effects of logging and driving on sport fish populations. The Blackwater River was examined for stream-spawning lake trout. A sampling program of the fall fishery for whitefish was undertaken. Brook trout were tagged during the spawning season on some of the tributaries to the lake.

*Rainy Lake.* In 1969, this Unit increased its staff by the addition of a Fisheries Management Officer. Between May and



September, extensive creel censuses were operated in the North and South Arms and Redgut Bay. The best fishing for yellow pickerel was in Redgut Bay, for northern pike and bass in the South Arm, and for black crappie in the North Arm. The abundance of fingerling yellow pickerel in 1969 approximated 650 per acre, an increase over 400 per acre in 1968 and 330 per acre in 1967. Lake-spawning yellow pickerel appear to be maintaining the population, whereas the stream-spawning contribution is low. If they are to survive, newly-emerged pickerel fry require large quantities of plankton, and streams are not great producers of this necessary food. Five sites were sampled regularly in 1969 to monitor water quality during the open-water season.

*Lake of the Woods.* Studies of the movements of yellow pickerel continued in 1969 with tagging of 1,000 fish in approximately equal numbers in Sabaskong Bay and the Keewatin Channel. Tag returns indicated fish from Sabaskong Bay do not travel very far; 75 per cent were caught within five miles of the tagging site. However, two were taken 22 miles northwest. Fish tagged in Keewatin Channel appeared more nomadic, some travelling in excess of 50 miles after tagging. Routine sampling of the commercial and angling catches continued to provide comparative data of the harvest of species for which these interests might compete. Estimates of the production of fingerling yellow pickerel were made by seine hauls during August.

*Timagami-Nipissing.* An intensive creel winter census on Lake Timagami indicated a yield to fishermen of 4,382 fish, of which 2,498 were lake trout and 1,581 were whitefish, for an estimated fishing pressure of 24,913 man-hours. Week-end fishing was 90 per cent of the total fishing pressure. Although very few planted lake trout have been recovered since plantings began in 1961, the majority of the fin-clipped fish would not be large enough to enter the fishery, so evaluation of this program must continue. Fish sampling for information on population dynamics was continued in Lake Nipissing with a yellow pickerel tagging project at Wasi Falls in Callander Bay. Serial sampling to monitor water quality continued.

*Lake Simcoe.* Investigations of populations of lake trout, yellow pickerel, smallmouth bass and whitefish continued in 1969. Smallmouth bass studies, in co-operation with the University of Guelph, were continued at a weir on the Pefferlaw River. Spawning adults were measured and tagged during their upstream migration, and numbers of resultant young were estimated during their downstream migration. Over 30 million yellow pickerel eggs were collected by artificial spawning of adult fish in the Talbot River. The sex ratio among approximately 500 fish was 6:1. This species

seems to be underexploited in Lake Simcoe, and efforts are underway to interest more fishermen in exploiting yellow pickerel. Lake whitefish were tagged during the netting operations for spawning lake trout in the fall. Comprehensive summer and winter creel censuses were continued.

*Kawartha Lakes.* Netting operations continued in these lakes during 1969. Game fish were tagged to obtain information on movements and mortalities. Creel censuses were used to make a special effort at retrieving data on tagged fish. Information to date indicate most game fish sampled range within small areas and are not highly nomadic.

*Bay of Quinte and Eastern Lake Ontario.* Creel censusing and monitoring of the commercial fishery continued in 1969. Investigations of the declining fishery in some areas of the Bay have not, as yet, determined the causes, although the declining water quality with consequent eutrophication and algae growth are suspect.

## SPECIAL PROJECTS

*Georgian Bay.* This study on yellow pickerel was continued in the Moon River area throughout 1969. Trap netting was carried out during two periods, April 24 to May 20, and August 5 to September 5. A total of 6,862 pickerel was captured of which 4,806 were tagged with monel metal jaw tags and released. Population estimates indicate a spawning population of approximately 22,500 in 1969 as compared to 21,000 in 1968.

Tag returns from all sources (excluding spring trap netting) totalled 612 and indicated that the pickerel popula-

*Taking spawn from a brook trout at Dorion Hatchery. Photo by A. H. Berst.*





tion becomes widely dispersed after the spawning period. Data on growth rates and sexual maturity showed little change from last year. Creel census studies revealed that angler success improved considerably in the Moon River area but declined slightly in the Shawanaga basin.

Examination of 65 tag returns from the Shawanaga area indicate that this population is now travelling farther afield after spawning. Over 75 per cent of the fish, which were tagged close to shore, had moved to off-shore waters and were occupying niches that were formerly inhabited by discrete off-shore populations only.

Commercial landings of pickerel decreased from 32,369 pounds in 1968 to 23,483 pounds in 1969. The largest decrease was in the northerly part of Georgian Bay and was partially offset by increases in other areas. A tenfold increase was experienced in the Shawanaga-Groundhog area and was due principally to the migration of fish from Shawanaga to Groundhog and the entrance of the 1965 year class to the fishery.

It is anticipated that these studies on yellow pickerel will be continued indefinitely.

*Bark Lake.* An intensive creel census study was conducted on Bark Lake, Renfrew County, during the summer of 1969, and on Aylen Lake which is being used as a control area for comparative purposes. A slight decline in angling success relative to lake trout was observed on both lakes when compared with the results of a similar survey in 1966. It was also noted that the average size of lake trout in the anglers' catch from Bark Lake increased slightly (3.1 to 3.6 lbs.) whereas the average size from Aylen Lake declined from 2.7 to 2.4 lbs.

Fall netting on the Bark Lake lake trout spawning beds was continued and resulted in the tagging and release of 147 lake trout. The return of tags by anglers from previously marked fish was encouraged, and 13 tags were received in 1969. Efforts to determine the average incubation period for lake trout eggs were continued and resulted in a figure of 145 days. Since the natural incubation period is so variable (55 days in 1968-9 and 145 days in 1969-70) and appears to relate directly to water temperature, it is probably more desirable to describe incubation in terms of degree days.

During the period October 17, 1969, to March 11, 1970 (incubation period), the Bark Lake water level was lowered a total of 28.61 feet.

This long-term project was initiated in 1965 to determine the effect of the extensive winter drawdown of water on

the natural reproduction of lake trout and will continue until 1975.

*Lac Seul.* Since construction of a dam in 1929, this large lake of 500 square miles in Sioux Lookout Forest District has experienced annual fluctuations of water levels between 14 and 16 feet. During 1969, a biologist and summer students continued the assessment of the effects of these fluctuations on fish production. Depth-sounding of the lake basin was completed, and assessment of water quality continued. Scale samples from 1,500 yellow pickerel and 1,500 northern pike, collected in gill and trap nets, will be used to relate age distribution with water fluctuations. As well, test netting was used to assess the species composition in the reservoir. Investigations were initiated in tributary lake systems for supplementary information on sub-populations of fish and their contribution to production in Lac Seul. The program will continue in 1970.

## PROVINCIAL FISH HATCHERIES

The potential for fish culture in the fields of protein production and recreational fishing has resulted in the development of a specialized technology. Fish culture has been practised for centuries but with varying degrees of success. New discoveries and techniques have had to evolve in the face of resistance from the old traditional practices.

Early provincial fish hatcheries concentrated on mass production of commercial species with little or no concern given to biological and environmental requirements. In general, the purpose of culture should be to assist rather than replace nature. Early fish culturists held the opposite view.

With better understanding of the requirements of hatchery fish for maximum growth and survival, we are now in a better position to justify the hatchery as an economical and practical tool of fisheries management.

The basic aim of our hatcheries today is the economic production of high-quality species to sustain and develop recreational fishing throughout the province. Our interests lie in maximizing the returns of hatchery fish to the angler, taking advantage of natural reproduction and growth afforded by releases into suitable natural waters.

Research is being conducted on the improvement of transportation and planting techniques to ensure maximum survival and returns to the angler. This includes the use of helicopters on small inland bodies of water. Our program of marking all hatchery fish by the removal of a single fin

has provided valuable information in this regard both from the public and from provincial lake inventory crews.

All fifteen hatcheries, located in twelve forest districts across the province, operated during 1969. An official opening of North Bay hatchery was conducted by the Minister of Lands and Forests in June, though the station was open for only partial operation, following renovation.

Fifteen Department employees attended the three-week Fisheries Management Course given each year at the University of Guelph. This course undergoes annual revisions to upgrade and familiarize our staff with current work in fisheries management.

The hybrid splake, developed for its rapid growth and early maturing qualities, and destined for the rehabilitation of Lake Huron, have already shown promise, despite the rather small initial planting at Meaford in 1968. During the latter part of the 1969-70 fiscal year, and into the 1970-1 fiscal year, over one-quarter million splake were released in the vicinity of Vail Point and Douglas Point in Georgian Bay and Lake Huron, respectively. A portion of this lot was also committed to South Bay on Manitoulin Island for follow-up studies. Ontario's ultimate annual commitment to the rehabilitation of these waters is one million yearlings. When coupled with assistance afforded Michigan in a similar program, it becomes obvious that additional hatchery space will be required if inland plantings of native species are to be continued at the present level.

Kokanee were reared from eggs received from Colorado, Montana and British Columbia as part of a continuing project to establish breeding populations in the Great Lakes. Fall fingerling kokanee were raised at Wiarton hatchery from spawn collected at Colpoy Creek near Wiarton. The application of fall fingerling plantings to the Lake Ontario streams may well succeed where previous failures had been experienced with eyed eggs and fry. It is apparent that kokanee have already established a small but viable population in the Lake Huron waters about the Bruce Peninsula and Manitoulin Island. Mature fish exceeding two pounds show promise, in both recreational and commercial fisheries.

Coho salmon, from Lake Michigan, were again reared at Chatsworth hatchery and released in the spring of 1970. Similar rates of smolt plantings were applied to the same waters as in 1969. The 1969 planting returned numerous precocious spawners to the Credit River in September of the same year. Approximately fifty per cent were marked with lamprey scars. However, we are optimistic that the coho will be a suitable species, if only on a short-term basis, for early rehabilitation of Lake Ontario, following lamprey con-

trol. Because the coho must be produced entirely in fish hatcheries (i.e., little hope is held out for natural reproduction in Lake Ontario waters), its use will be limited and most probably it will be replaced with a species from which natural reproduction in the wild state can be expected.

Lake trout eggs from Manitoba were received by our Thunder Bay hatchery in exchange for brook trout eggs from Dorion hatchery and maskinonge fry from the Deer Lake station. Good returns from the use of two-year-old lake trout, planted in the Muskoka Lakes, has stimulated a study to be initiated in Lake Opeongo, Algonquin Park, by our Research Branch.

Fifteen sturgeon, up to thirty-eight inches in length, were transferred from the Ottawa River to the Westport hatchery and subsequently shipped to Russia for genetic work in their sturgeon-caviar hatcheries. At the request of the Canadian Embassy in Quito, Ecuador, 50,000 eyed brook trout eggs were shipped from Dorion hatchery to introduce the species into suitable waters of that country.

Experimental culture of the yellow pickerel at White Lake hatchery was continued to refine the technique. The discovery that pickerel can be reared on manufactured food pellets, and cultured beyond the cannibalistic stage, may be academic, as stocking rates required to exert a significant influence on a body of water are apparently prohibitive. The hatchery culture of yellow pickerel for planting in natural waters can be justified only for introductory plantings, not to supplement an existing population.

The golden shiner culture project continued at Westport hatchery in an attempt to establish a hatchery oriented brood stock and to determine methods and procedures for the artificial culture of this species by the bait fish industry.

Several provincial fishing areas across the Province, maintained by this Department and the Conservation Authorities Branch of the Department of Energy and Resources Management, were stocked with catchable size trout. These fish provide quality angling in areas of high population where suitable water and opportunity are limited.

Studies by Department personnel, in co-operation with the University of Guelph and the Ontario Water Resources Commission, conclusively proved the serious effect of DDT pesticide on lake trout spawn and early fry stages. The work was carried out at Wiarton hatchery using both Lake Simcoe and Muskoka Lakes stock.

University and Government research agencies were also provided with Provincial hatchery fish for studies related directly or indirectly to improving our knowledge of fish-



eries management. Included here are brook trout used for bio-assays (determining the toxicity of lampricide to stream fishes) by the Sea Lamprey Control Unit of the federal Department of Fisheries and Forestry.

Our commitment to the Great Lakes Fishery Commission for the rehabilitation of Lake Superior (500,000 lake trout yearlings annually), following sea lamprey control on these waters, was met by our Dorion and Tarentorus hatcheries.

On a permissive basis for two years, fall spawning rainbow trout eggs were imported from western United States by private industry. The oldest stock in the fall of 1969 was still one year short of full maturity. There was thus a shortage of rainbow trout spawn in Ontario, and our fear of importing egg-borne virus diseases resulted in a refusal for further importations. Through co-operative efforts with the private fish hatchery industry, we met the entire demand by providing over 250,000 eyed rainbow trout eggs on a sale basis from our Normandale trout rearing station. It is anticipated that this demand on provincial egg stocks will diminish as the brood stock held by the industry matures.

The visiting public are welcome at our hatcheries seven days a week. Conducted tours, particularly of school children, are offered to the public, and afford an opportunity to observe spawning, incubation and fish rearing practices.

The assistance offered to the public, who are interested in everything from developing a private trout hatchery to the reasons why their tropical fish are dying, is becoming an ever increasing part of our work load. Our extension service is generally limited to the giving of advice verbally and by dispensing literature. However, several field visits were co-ordinated to solve particular problems.

During 1969, there were twenty-nine private fish hatcheries licensed for the sale of hatchery fish for restocking purposes, and fifty-nine for the sale of hatchery fish for human consumption purposes. The growth of this industry in Ontario appears to be limited only by the availability of good ground waters for the successful culture of trout.

## DOMESTIC OR SPORT FISHING LICENCES

Type of Licence	Number of Licences Sold		
	1967	1968	1969
Non-resident Smelt .....	5,171	4,870*	6,112*
Resident Smelt .....	5,706	3,941	4,493
Angler's Bait-fish .....	520	322	351
Domestic Dip-net.....	425	826	1,076

\*Includes non-resident bow and arrow fishermen.

## SALE OF ANGLING LICENCES

Type of Licence	1966	1967	1968	1969
Non-resident Seasonal .....	409,539	411,768	446,468	446,024
Non-resident 3-day .....	151,373	156,493	161,473	177,353
Non-resident Organized Camp .....	10,541	10,550	7,670	6,998
Resident-Introduced Jan. 1/69.....			69,648	603,670
Resident Provincial Park (discontinued Dec. 31/68) .....	12,805	13,120	13,200	
Resident Provincial Park Organized Camp (discontinued Dec. 31/68)	444	446	399	

## NUMBER OF FISH DISTRIBUTED FROM ONTARIO PROVINCIAL HATCHERIES

Species	1967	1968	1969
Bass, Largemouth			
Fry .....	67,500	60,000	9,000
Fingerling .....	75,000	49,900	56,390
Yearling .....	—	2,000	—
Adult.....	260	45	—

NUMBER OF FISH DISTRIBUTED  
FROM ONTARIO PROVINCIAL HATCHERIES (continued)

Species	1967	1968	1969
Bass, Smallmouth			
Fry .....	98,000	38,200	86,000
Fingerling .....	211,950	91,000	113,550
Adult.....	178	181	110
Herring			
Eyed Eggs.....	7,030,000	—	—
Fry .....	2,000,000	—	—
Maskinonge			
Fry .....	2,580,000	2,400,000	2,957,600
Fingerling .....	12,200	26,600	33,350
Yearling .....	—	—	—
Adult.....	195	—	—
Pickrel, Yellow			
Eyed Eggs.....	13,054,800	6,240,000	10,750,000
Fry .....	28,000,000	189,050	1,300,000
Fingerling .....	41,656	5,200	14,400
Adult.....	200	12	—
Salmon, Coho			
Yearling .....	—	—	156,886
Salmon, Kokanee			
Eyed Eggs.....	—	—	—
Fry .....	2,405,485	413,000	572,025
Fingerling .....	212,100	58,525	63,000
Splake			
Fingerling .....	—	2,000	—
Yearling .....	65,452	36,226	64,102
2 Year-olds .....	7,300	—	—
Adult.....	—	984	431
Sturgeon			
Adult.....	3	—	15
Trout, Albino Brook			
Yearling .....	12,861	—	—
2 Year-olds .....	1,093	—	—
Trout, Aurora			
Fingerling .....	—	—	2,584
Trout, Brown			
Yearling .....	—	—	14,957
Trout, Brook			
Eyed Eggs.....	2,741,000	—	2,150,000
Fry .....	50	—	—
Fingerling .....	1,125,454	524,463	524,050
Yearling .....	1,654,182	1,149,091	1,344,647
2 Year-olds .....	52,470	26,535	32,775
Adult.....	40,720	13,406	4,530



## NUMBER OF FISH DISTRIBUTED FROM ONTARIO PROVINCIAL HATCHERIES *(continued)*

Species	1967	1968	1969
Trout, Lake			
Eyed Eggs.....	50,000	—	—
Fry .....	—	20,000	—
Fingerling .....	328,443	190,540	—
Yearling .....	1,291,969	1,351,745	1,133,300
2 Year-olds .....	12,600	10,462	14,915
Adult.....	405	1,209	—
Trout, Rainbow			
Eggs .....	45,000	200,000	—
Eyed Eggs.....	631,500	333,000	20,000
Fry .....	6,000	—	85,750
Fingerling .....	87,810	67,536	44,050
Yearling .....	147,850	361,180	434,816
2 Year-olds .....	29,500	22,296	20,354
Adult.....	13,600	470	41
Whitefish			
Eyed Eggs.....	300,000	—	—
Fry .....	240,000	—	—
Pike, Northern .....			
Adult.....	—	303	—

## COMMERCIAL FISH UNIT

The value of a balanced harvest of available stocks in improving the recreational as well as the commercial fisheries must not be overlooked in achieving maximum social and economic benefits from a resource.

The Commercial Fish Unit plays an integral role in the program of full, sustained and multiple use of the fishery resource in Ontario.

The development and management of the commercial fishery is accomplished through the assistance of field staff by collection and analysis of biological and economic statistics on the harvest; planning and co-ordinating surveys to assess populations and evaluate the extent to which they are utilized; protection of the biotic potential through regulations (licences, seasons, quotas and size limits); and the implementation of programs that would focus on the modernization of the industry, making it responsive to changing consumer requirements and needs while adapting to a dynamic renewable resource.

## THE COMMERCIAL FISHERY

The catch by Ontario commercial fishermen in 1969 of over 63 million pounds is the second highest on record. The value of 7.4 million dollars for this catch represents a 24 per cent increase over 1968, which is the sharpest rise witnessed by the industry in over 20 years.

The commercial catch for the Great Lakes (56.5 million pounds) surpassed the previous high of 1962 by nearly two million pounds. Yellow perch and smelt were caught in record quantities in Lake Erie, accounting for nearly one-half and one-quarter, respectively, the total weight of the commercial catch in Ontario. Other dominant species in the Great Lakes fisheries are the lake herring from Lake Superior, the lake whitefish from Lake Huron, and the white bass from Lake Erie.

The commercial fishery varies widely for the lake basins and inland waters with respect to both size and composition of the catch. The northern inland fisheries continue to be the major source of yellow pickerel, lake whitefish, northern pike, and sturgeon in the Province.

While the number of men engaged in fishing declined four per cent from last year, the amount of invested capital remained the same. The industry continues to upgrade its operations which is demonstrated in the increased average earning per fishery unit.

Bait fish operations, which provide a valuable service to the anglers across the Province, are continuing to expand as a commercial fish industry. Culturing techniques and improved holding facilities have extended the period of supply and improved the quality of bait fish sold. Sales, which are not included in the above statistics, totalled 1.8 million dollars in 1969, which is an increase of 20 per cent from the previous year. The bait fish industry, which is controlled through licensing, increased five per cent to a total of 3,936 operations.

## FISHERIES DEVELOPMENT PROGRAMS

In the harvesting of food fishes, the techniques used by a diverse industry, which ranges from the canoe and gill-nets of the northern Ontario fisheries to the electronically equipped trawlers in Lake Erie, are not necessarily the most suitable for the proper utilization of the resource.

The Department, in conjunction with a cost-sharing program of the federal Department of Fisheries and Forestry, has initiated and is actively participating in experimental projects designed to develop industrial or fishing techniques which have economic advantage to the commercial fishing industry. Two such projects were continued from 1968, and one new project was undertaken in 1969.

On Lake Ontario, where in 1968 an exploratory trawling program revealed large concentrations of smelt and alewife, insights into economic and biological aspects of a commercial trawl fishery are being gained. The project was continued for 1969 with emphasis on exploitation of this under-utilized resource. Again, a Lake Erie trawler and crew were contracted. From early August, 1969, until mid-March, 1970, over 300,000 pounds of fish were caught in 132 hours of towing time. The average catch rate during a period from December to March near Toronto was nearly 5,000 pounds per hour.

The daily catch rates varied greatly depending on the area fished, time of year that fishing was done, and trawl type. Little difficulty was experienced in selling the fish. On the basis of the consistently good catches made during the winter in western Lake Ontario, and the prices received for the fish, a decision was made that trawling could be profitable during at least part of the year. Plans to allow a maximum of three vessels to operate experimentally during 1970 are underway. These operations, which are to receive no

financial support from the Department, may well be the beginning of a trawling fishery in Lake Ontario.

A three-year project of financial assistance to the industry was terminated in 1969 with the completion of a fish meal plant using fish-processing waste material and fish unsuited for food. The plant, which operated on a production basis for nearly nine months in 1969, produced 1,450 tons of meal. The meal, which was shown to be as high in quality as marine sources, supplies a need for high-quality protein in poultry or animal feed formulae. Information gained from this project has shown that fish meal plants are capable of operating efficiently and add materially to the economy by utilizing material which would otherwise be wasted.

The third program supported by the Department in 1969 was the development of a suitable bulk handling technique for smelt on Lake Erie. Traditionally, the handling of large volumes of fish in small boxes resulted in large labour and material costs. The new system, conducted in co-operation with elements of the Lake Erie commercial fishing industry, uses large-capacity boxes designed for mechanical handling from the boat deck through road transport to the processing plants. The process proved successful in operation and has shown substantial cost benefits as well as improvements in the quality of the fish. With minor modifications, this technique could be used in other parts of the Province.

## COMMERCIAL FISH MANAGEMENT

The Commercial Fish Unit is vitally interested in the development, protection, and use of the renewable water resources in the Province. The establishment of commercial fisheries is intended to serve desirable conservation and economic purposes. Operations are allowed only on the resource base that is capable of sustaining biologically and supporting economically.

Licensing policy, through sound biological management, is aimed at strengthening the industry by limiting entry and withdrawing redundant fishing privileges.

Management of the fisheries involves keeping in equilibrium three ecological forces—the fish, the environment, and man. An ecological approach to conservation implies that management objectives should be to develop or to protect the environment in order to provide the greatest yield in optimum habitat for man. Exploitation of fish populations necessitates fish management. Rates of exploitation are regulated by various restrictions on catch which constitute a final potential means for sound management manipulation of fish populations. Restrictive measures are directly related to fishing pressure and to the vulnerability of the species in the waters under consideration.



Adequate knowledge is vital to adequate management. If the Department is to achieve management goals, emphasis must be placed on providing support for studies that will strengthen important gaps in the knowledge of how to manage fisheries on a more predictable basis.

## MARKETING DEVELOPMENT

The Commercial Fish Unit, in implementing programs to assist the industry in its efforts to advance technologically, operates, with the assistance of field staff, under an objective of sustained improvement of the lines of communication with commercial fishermen. The needs of the fishermen and the objectives of the Department can only be understood with the rapport that is established through direct contact in a program to provide an optimum, continuing contribution of renewable resource production to the economy of the Province.

Through a voiced need by fisheries throughout the Prairie Provinces and the Northwest Territories, the Freshwater Fish Marketing Corporation was created by federal and provincial legislation to organize marketing, improve capitalization in processing, stabilize prices, and provide better access to world markets for all species of fish. After careful consideration, the Province agreed, in 1969, that the Corporation would become the buying and selling agent for freshwater fish in northwestern Ontario. Planning and direction by the Corporation is expected to provide economic advantages not previously realized by the numerous remote fisheries in the Province.

For several years, the Fisheries Prices Support Board, a federally administered program, has helped in stabilizing yellow perch prices for the commercial fishermen on Lake Erie. This program has been achieved by buying these premium freshwater fish and holding them in cold storage until the market was ready to accept the supplies. In spite of exceptionally high production in 1969, prices remained relatively strong and stable, which resulted in few fish being offered to the Board for cold storage.

The Department continued its participation in programs to assist the industry by providing field service for the Fishing Vessel Insurance Plan, a low-cost insurance program initiated by the Department of Fisheries and Forestry. Two claims for indemnity were met in 1969. The success of the program was further supported by an announcement of reduced premiums and improved benefit structure.

## FISHERIES INVENTORY UNIT

The Unit was established in 1966 to conduct an inventory of Ontario's lakes and streams, and to determine the present

and potential capability of every body of water as a fish producing unit.

The refinement of survey methods, greater standardization in conducting inventory surveys, the search for better gear, and the evaluation of techniques all received increased emphasis during the year.

Range finders were introduced to determine precisely the distance from shore of the beginning and end of each echo-sounding run. More conductivity meters were available so that crews could carry out their own complete water analysis without the need for costly and time-consuming laboratory analysis. Greater emphasis was placed on the use of mono-filament nylon gill nets for obtaining catches of fish in less time than with standard nets.

Lake and stream surveys are highly technical and require a high degree of training on the part of those carrying them out. To this end, forty-eight university students and nineteen fisheries personnel, from fifteen of the twenty-one forest districts, attended a one-week training and refresher course at the Ontario Forest Technical School, Dorset, prior to the commencement of the field program in June.

The determination of the age of fish to determine growth rates, dominant year classes and other factors is a vital part of fisheries management. During the year, an experienced fish scale reader, who will be responsible for the training of a number of specialists in this field, was hired.

## PROGRESS IN LAKE INVENTORY SURVEYS

Number of lakes surveyed each year 1958-1969



## QUANTITIES OF FISH LANDED (pounds)

Species	Lake Ontario	Lake Erie	Lake St. Clair	Lake Huron	Georgian Bay	North Channel
Bowfin .....	3,256	21,040	—	—	—	—
Bullheads .....	216,656	19,448	5,040	—	—	61
Burbot .....	—	—	—	—	—	3,273
Carp .....	541,043	189,531	81,978	67,331	26,576	7,507
Catfish .....	23,230	101,513	66,871	10,764	8,512	—
Chub .....	—	—	—	85,773	155,621	1,200
Eels .....	169,054	409	—	—	—	—
Freshwater Drum .....	23,504	339,377	17,739	67,091	85	—
Goldeye .....	—	—	—	—	—	—
Lake Herring .....	40,137	12	—	2,335	11,109	3,723
Lake Trout .....	—	—	—	412	61	12
Lake Whitefish .....	80,564	1,405	—	493,181	196,283	160,252
Northern Pike .....	27,667	972	27,458	302	9,927	10,762
Yellow Perch .....	438,639	29,801,833	48,307	141,482	21,316	9,195
White Perch .....	250,421	—	—	—	—	—
Rock Bass & Crappies .....	47,720	28,314	47,689	211	22	826
Round Whitefish .....	—	—	—	22,165	3,878	7,153
Saugers .....	84	99	—	14	—	—
Smelt .....	146,358	15,075,522	—	4,373	85	—
Sturgeon & Caviar .....	1,043	478	17,289	3,536	701	10,618
Suckers .....	16,644	16,317	106,483	94,941	41,397	47,100
Sunfish .....	159,566	70,526	73,218	—	—	—
Yellow Pickerel .....	18,410	192,591	328,158	194,103	74,011	18,939
White Bass .....	3,500	874,840	40,496	3,353	—	—
Mixed Scrap "Animal Food" .....	62,891	1,291,769	58,368	244,473	31,035	32,265
Total Catch .....	2,270,387	48,025,996	919,094	1,435,840	580,619	312,886
Total Value .....	\$ 329,813	\$ 4,244,150	\$ 332,056	\$ 510,696	\$ 183,758	\$ 124,626



Lake Superior	Northern Inland	Southern Inland	Total Catch	Total Value
—	—	2,949	27,245	\$ 995
—	25,038	206,496	472,739	89,571
—	413,174	—	416,447	3,617
635	—	131,715	1,046,316	99,962
—	—	9,126	220,016	66,625
7,521	210,637	136	460,888	51,963
—	—	5,757	175,220	44,210
—	—	3,692	451,488	13,935
—	362	—	362	48
2,396,085	298,362	27,742	2,779,505	215,555
201,696	80,014	—	282,195	131,450
211,366	1,804,939	8,614	2,956,604	1,086,324
4,220	787,180	2,603	871,091	98,831
7,626	23,698	14,105	30,506,201	3,316,640
—	—	1,079	251,500	22,665
—	33,458	27,993	186,233	43,150
18,883	4,583	30	56,692	7,676
12,425	38,319	23	50,964	12,896
—	—	—	15,226,338	561,456
2,891	42,327	11,060	89,943	119,739
53,364	876,265	21,475	1,273,986	25,591
—	—	109,509	412,819	60,261
23,559	1,200,149	49	2,049,969	999,447
—	880	1,931	925,000	293,020
11,078	238,065	42,917	2,012,861	12,177
2,951,349	6,077,450	629,001	63,202,622	
\$ 402,654	\$ 1,148,877	\$ 101,174		\$ 7,377,804

Inventory surveys were conducted in all forest districts except Chapleau, Lake Erie and Lake Simcoe. Including both new surveys and surveys to up-date some work carried out in the past, 969 lakes were surveyed. Echo sounding to produce an accurate bottom contour map, water analysis, the determination of fish species present, and the gathering of fishing information form the principal parts of the survey. This information is later analyzed and the results used to provide a sound fisheries management program.

The accurate identification of all fish is an important requirement of each survey, but many of the smaller species are difficult to identify except by experts. In co-operation with the Department of Ichthyology of the Royal Ontario Museum, Unit personnel identified all collections of small fish sent in by lake survey crews. Over the province, 59 different species were identified.

Work to evaluate infra-red photography as an aid in plant identification was continued. Aerial photographs of Tiny Marsh near Midland were taken with both infra-red and colour film, and the results compared. Preliminary results show that infra-red film can be employed to identify aquatic plants from aerial photographs, but much refining of techniques is required. The work is continuing.

Although the primary emphasis has been on lake surveys, streams have not been overlooked. Following a study of stream survey methods used by other agencies all over the world, a two-man crew was employed to develop techniques suitable for our needs in Ontario. The crew worked in the Forest Districts of Lake Simcoe, Lake Huron and Lindsay, and by the end of the summer had prepared a stream survey manual which will be tested further in 1970.

## INDIAN RESOURCE DEVELOPMENT

The policy of the Department in the major portion of northern Ontario favours local residents, mainly Indian Bands, in the development of fish and wildlife resources. The following projects were carried out during the past fiscal year under the Federal-Provincial Resource Development Agreement.

*Indian Delegates.* Indians attended District meetings held under the Agreement and are now taking an active part in the planning of projects under the Agreement.

*Fur.* From beaver population surveys in the Patricia Districts, annual estimates of population changes and distributions were related to food supplies, water and weather conditions, and diseases. Trappers from James Bay were assisted in establishing trapping areas in central Ontario.

## COMMERCIAL FISHING EQUIPMENT

		Lake Ontario	Lake Erie	Lake St. Clair	Lake Huron	Georgian Bay
NUMBER OF MEN EMPLOYED:		277	577	60	123	106
FISHING BOATS:						
40' and over .....	No.	4	131	—	29	17
	Tons	50	3,211	—	616	246
	Value (\$)	24,000	2,762,760	—	456,822	174,868
20' to 39' .....	No.	56	54	16	13	31
	Value (\$)	97,275	223,165	45,300	57,300	85,900
Under 20' .....	No.	207	74	50	14	50
	Value (\$)	66,983	22,501	28,250	11,070	20,245
FISHING GEAR:						
Gill Nets .....	Yards	926,428	4,084,237	—	989,740	755,165
	Value (\$)	226,078	1,489,167	—	309,009	196,025
Pounds Nets .....	No.	1	215	473	14	25
	Value (\$)	200	96,000	173,050	13,200	16,300
Trap Nets .....	No.	32	210	—	142	7
	Value (\$)	9,550	130,800	—	120,843	8,450
Hoop Nets .....	No.	848	82	—	—	—
	Value (\$)	77,275	7,090	—	—	—
Seine Nets .....	Yards	2,740	8,850	3,700	—	100
	Value (\$)	5,490	31,325	7,550	—	50
Night Lines .....	Hooks	30,100	8,602	26,100	100	1,800
	Value (\$)	3,770	2,125	4,740	100	450
Dip Nets .....	No.	2	—	—	—	—
	Value (\$)	50	—	—	—	—
Trolling Lines .....	No.	18	—	—	—	—
	Value (\$)	743	—	—	—	—
Trawls .....	No.	—	113	—	1	—
	Value (\$)	—	113,610	—	800	—
SHORE INSTALLATIONS:						
Freezers and Ice Houses .....	No.	21	20	17	15	37
	Value (\$)	15,100	367,750	21,700	92,200	111,325
Piers and Wharves .....	No.	39	47	17	11	49
	Value (\$)	14,155	73,257	13,550	10,700	42,650
Net Sheds .....	No.	123	132	28	37	54
	Value (\$)	88,265	515,076	59,200	121,700	101,700
TOTAL VALUE .....		\$ 628,934	\$ 5,834,626	\$ 353,340	\$ 1,193,744	\$ 757,963



North Channel	Lake Superior	Northern Inland	Southern Inland	Totals
35	137	534	110	1,959
5	14	—	—	207
70	262	79	—	4,534
45,500	188,000	74,332	—	3,726,282
9	40	72	4	295
19,250	89,100	121,515	2,460	741,265
24	71	320	85	895
5,475	33,210	183,357	14,515	385,606
161,780	624,897	853,900	22,700	8,418,847
37,540	176,082	263,886	8,800	2,706,587
12	8	42	—	790
7,500	9,245	30,225	—	345,720
10	6	71	1	479
4,500	2,450	49,032	250	325,875
—	—	114	696	1,740
—	—	10,575	46,412	141,352
—	—	—	1,797	17,187
—	—	—	3,913	48,328
—	—	750	2,800	70,252
—	—	22	470	11,677
1	—	—	3	6
5	—	—	35	90
—	—	—	—	18
—	—	—	—	743
—	5	—	—	119
—	6,500	—	—	120,910
16	45	223	8	402
14,050	117,050	171,855	3,575	914,605
13	45	146	15	382
7,000	28,300	61,187	2,833	253,632
18	66	150	20	628
14,750	55,620	81,622	13,860	1,051,793
\$ 155,570	\$ 705,557	\$ 1,047,608	\$ 97,123	\$10,774,465

*Lake Surveys.* Intensive and short-term surveys of lakes, to assess the potential for commercial fisheries, and also to investigate the potentials for sport fishing, are carried out annually.

*Commercial Fish Management.* Commercial fishermen were instructed in netting, cleaning and packing of fish in a project expected to improve substantially the quality of the product and its marketability. Advice was also given on camp sanitation, care of equipment, and bookkeeping methods. The use of trap nets of a special type was demonstrated to Indian fishermen on Lake of the Woods.

*Tourism.* Northern areas have been investigated for future tourist development, and, where feasible, Indians have been assisted in setting up and operating a tourist industry. Goose camps are in operation on Hudson and James Bays at Fort Severn, Winisk, Attawapiskat, Kapiskau River, Fort Albany and Tidewater. The local inhabitants realized \$62,000 from these camps in the fall of 1969.

*Hide Collection.* Moose and deer hides were collected throughout the Province and distributed to Indian Bands for handicraft work or personal use.

In addition, in timber management work, much of the Department's tree planting on Crown lands in the north is done by Indian Groups. An estimated \$140,000 to \$160,000 is expended annually for this purpose in the areas where Indians are likely to benefit. At the same time, to assist Indians in managing Reserve forests, the Department provides technical advice that includes advice on reforestation, logging techniques and lumber production.

*Mr. Joe Chookomolin, manager of a Cree fishing camp on the Sutton River near Hudson Bay, with a brook trout, locally regarded as average-size. Photo by J. C. Weir.*



# PARKS BRANCH



*Killarney Provincial Park.*

Parks Branch is divided into three sections with duties and responsibilities as follows.

## RECREATION PLANNING

Long-range planning for parks and related public recreation areas.

## PARK PLANNING AND DEVELOPMENT

Detailed Provincial Park master plans and control of all park development according to approved plans.

## PARK MANAGEMENT

Establishment and control of standards of park operations; direction of park interpretive programs; establishment of a nature reserve program; management of operating revenues and expenditures; compilation of statistical data; and management of a program of public access points to water, and a system of canoe routes, hiking trails and snowmobile trails.



# CLASSES OF PARKS IN ONTARIO

To meet the broad spectrum of present park requirements and to plan for the future, the Provincial Park system contains five different classes or types. Each offers different recreational experiences, and each provides varied facilities in keeping with the class purpose.

- *Class I, Primitive Parks* are large areas of natural landscape preserved for recreation, education and scientific observation. They are reserved from natural resource exploitation and from major facility development such as serviced campgrounds.
- *Class II, Wild River Parks* are significant rivers established for recreation, aesthetic or historic purposes. They are protected from the intrusion of incompatible land and water uses.
- *Class III, Natural Environment Parks*, landscapes of outstanding aesthetic or historic significance, are established primarily for recreation and education. Other resource uses are permitted providing they do not conflict with recreation. Facilities and services may be limited so as to interfere as little as possible with the environment. Zones further protect special areas.
- *Class IV, Recreation Parks* are areas of intensive recreational use in which the environment may be substantially

modified to accommodate park users. There are two subclasses to this class: (1) Recreation Areas, which are day-use oriented; and (2) Campgrounds which are camper oriented. These parks contain more fully-serviced facilities.

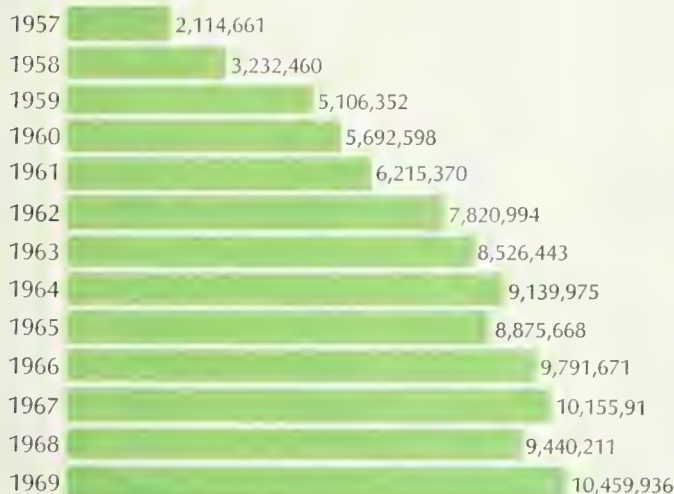
- *Class V, Nature Reserves* are unique and representative natural areas established for scientific and educational uses. General public enjoyment is permitted if it is not detrimental to the area.

## RECREATION PLANNING

Work was initiated during 1968-69 on a significant new research and planning program, the Canada Outdoor Recreation Demand Study (CORDS). This study, which is a co-operative project involving the 10 provincial park agencies and the Federal Government, aims at achieving a more complete understanding and measurement of outdoor recreation demands in Canada to guide investment and management planning, to identify and evaluate policy alternatives, and to forecast recreational use of resources as it relates to alternative development proposals.

During the summer of 1968, the Recreation Planning Section carried out an inventory of some 12,000 public and private outdoor recreation facilities in both urban and non-urban areas. The Conservation Authorities Branch of the Department of Energy and Resources Management co-operated in this project which is one of the basic inputs into the CORDS program. During 1969-70, the inventory

TOTAL ANNUAL VISITORS



TOTAL ANNUAL CAMPERS

Starting in 1963, the number of campers shown on renewal campsite permits were not included in the total camper statistics



# RECORD OF PARK USE AND PARK FACILITIES IN 97 PROVINCIAL PARKS

		Visitors		Campers		Camping	Swimming
Park District	Park Classification	1968	1969	1968	1969	Units	Beaches (Feet)
CHAPLEAU							
Five Mile Lake .....	Recreational Park	5,658	6,674	3,338	4,020	85	500
Ivanhoe Lake .....	Natural Environment	25,660	35,910	5,825	6,144	144	8,500
Missinaibi Lake ....	Natural Environment	—	1,478	—	1,190	—	200
Wakami Lake .....	Natural Environment	—	11,487	—	1,324	48	12,000
COCHRANE							
Greenwater .....	Natural Environment	20,465	15,327	3,034	4,095	52	600
Kettle Lakes .....	Recreational Park	34,593	46,236	4,569	6,962	130	4,000
Polar Bear .....	Primitive Park	—	—	—	—	—	—
Tidewater .....	Natural Environment	—	—	—	—	24	200
FORT FRANCES							
Caliper Lake .....	Recreational Park	20,442	34,597	7,146	9,046	93	300
Lake of the Woods ..	Natural Environment	30,794	23,461	2,580	3,570	100	1,500
Quetico .....	Natural Environment	54,515	45,588	9,651	9,399	135	805
GERALDTON							
Blacksand .....	Natural Environment	29,118	22,146	4,703	5,016	68	5,250
Klotz Lake .....	Recreational Park	14,230	9,161	2,834	3,173	33	150
MacLeod Lake .....	Recreational Park	26,332	42,026	4,861	6,908	54	4,240
Neys.....	Natural Environment	42,077	56,892	13,110	16,378	204	5,280
Rainbow Falls .....	Recreational Park	68,250	75,771	21,118	24,595	194	300
KAPUSKASING							
Nagagamisis .....	Natural Environment	17,792	8,367	2,591	2,252	80	3,000
Remi Lake .....	Recreational Park	42,565	45,862	4,157	5,374	80	1,500
KEMPTVILLE							
Fitzroy.....	Recreational Park	101,726	118,951	10,100	17,943	255	660
Rideau River .....	Recreational Park	170,315	190,811	8,650	13,223	185	1,587
Silver Lake .....	Recreational Park	85,765	72,067	9,633	22,254	194	650
South Nation .....	Recreational Park	36,728	37,814	2,837	3,979	28	—
KENORA							
Aaron .....	Recreational Park	47,006	47,202	9,928	10,631	70	400
Blue Lake .....	Recreational Park	32,293	26,194	9,292	8,866	175	2,750
Rushing River .....	Recreational Park	110,423	88,836	22,540	26,309	165	650
Sioux Narrows .....	Recreational Park	38,227	22,392	4,415	5,810	78	150
LAKE SIMCOE							
Bass Lake .....	Recreational Park	109,421	210,198	22,025	20,758	153	350
Devil's Glen .....	Recreational Park	58,210	49,438	2,496	3,978	40	—
Earl Rowe .....	Recreational Park	235,595	351,768	23,342	40,231	545	2,000
Mara .....	Recreational Park	58,009	49,351	9,995	9,511	100	550
Sibbald Point .....	Recreational Park	274,184	294,462	27,374	36,266	725	2,000
Six Mile Lake.....	Recreational Park	100,964	142,672	16,059	20,641	180	700
Springwater .....	Recreational Park	71,143	67,386	—	—	—	—
Wasaga Beach .....	Recreational Park	830,149	947,941	—	—	—	39,000

Comfort Stations (Flush Toilets)	Picnic Area (Acres)	Museums, Exhibit Centres	Nature, Hiking Trails (Miles)	Boat Launch Ramps	Trailer Sanitary Stations
—	4	—	1¼	X	X
—	17	—	1	X	X
—	—	—	—	X	—
—	3	—	3	—	X
—	15	—	5¾	X	X
X	45	—	5½	X	X
—	—	—	—	—	—
—	1½	—	1¼	—	—
X	5	—	—	X	X
—	10	—	1	X	X
X	5	M	4	X	X
—	6	—	9	X	X
—	2	—	—	X	X
—	5	—	2	X	X
X	2	—	1	—	X
X	5	—	2	X	X
—	38	—	—	X	X
—	30	—	1¼	X	X
X	22½	—	—	X	X
X	22	—	—	X	X
X	2½	—	—	X	X
—	8	—	—	X	—
—	7	—	1	X	X
X	6	—	—	X	X
X	23	—	1½	X	X
—	2	—	—	X	X
X	18	—	—	X	X
—	6	—	1½	—	—
X	40	—	—	X	X
X	21½	—	—	—	X
X	130	M	2	X	X
—	15	—	—	X	X
X	63	—	—	—	—
X	262	—	—	X	—

*continued.*

data were tabulated and bound into a number of volumes which, in total, present a description of the supply of outdoor recreation facilities for Ontario. During 1970-71, mapping of these facilities will begin for the preparation of an outdoor recreation facilities atlas for the province.

During the summer of 1969, under the auspices of CORDS, a Park Visitor Study was carried out, again in conjunction with the Conservation Authorities Branch. Thirty-six provincial parks were included in the sample. The study was extremely successful, and the keen interest of park visitors was reflected in the high rate of return (over 75 per cent) of self-administered questionnaires. The objective of the study was to gain insight into the locational, travel and socio-economic characteristics of the park-visitor, as well as their activity and use patterns. A great deal of information is now available in the form of tables describing the park visitor.

The CORDS program is also closely integrated with the Tourism and Outdoor Recreation Plan (TORP) program now underway as a co-operative undertaking of several departments—Tourism and Information, Treasury and Economics, Municipal Affairs, Education, Highways, and Lands and Forests. The purpose of the TORP program is to provide the factual basis, and to formulate alternative plans, for the attainment of the social and economic goals defined in Design for Development insofar as they relate to tourism and outdoor recreation.

The summer of 1969 also included a sample survey of boaters on the Trent-Severn Waterway carried out for the Department by students of Trent University. The objectives of the study were: to assess the demand for outdoor recreational facilities on the waterway; to ascertain the characteristics of water-oriented recreationists; and to gain a more precise knowledge of the actual boat traffic in the Trent-Severn System. Interim analysis of the data, collected by means of oral interviews, has been limited to simple summaries and tabulations. A final report on more detailed analysis of the data is expected shortly. The results of this study are being used as part of the data base for the Canada-Ontario Rideau-Trent-Severn Study.

In conjunction with the current master planning process in Algonquin Park, the Department commissioned an Economic Impact Study in 1969. The purpose was to discover the economic contribution that recreation and the forest industry made to the local and provincial economies. The information will add to the understanding of the total role of Algonquin Park in Ontario. This is part of a continuing series of studies covering all aspects of the park.

During 1969-70, work continued on the assessment and evaluation of lands for future provincial park development,



# RECORD OF PARK USE AND PARK FACILITIES IN 97 PROVINCIAL PARKS

Park District	Park Classification	Visitors		Campers		Camping Units	Swimming Beaches (Feet)
		1968	1969	1968	1969		
LAKE ERIE							
Holiday Beach .....	Recreational Park	92,087	147,701	2,631	2,788	56	1,750
Ippewash .....	Recreational Park	277,329	352,143	19,413	19,310	266	1,600
John E. Pearce .....	Recreational Park	—	—	—	—	—	—
Long Point .....	Recreational Park	246,698	194,881	20,325	27,581	327	1,600
Pinery .....	Natural Environment	500,303	842,853	72,821	123,725	1,075	27,000
Port Bruce .....	Recreational Park	—	—	—	—	—	1,000
Rock Point .....	Recreational Park	37,372	47,127	4,186	5,158	47	1,900
Rondeau .....	Natural Environment	512,313	506,257	36,406	32,706	433	18,500
Selkirk .....	Recreational Park	33,805	49,270	2,529	5,463	165	1,600
Turkey Point .....	Natural Environment	249,949	297,811	10,191	13,049	472	1,200
Wheatley .....	Recreational Park	66,462	79,588	6,573	7,968	127	6,900
LAKE HURON							
Craigleith .....	Recreational Park	42,561	74,090	11,028	23,406	172	3,100
Cyprus Lake .....	Natural Environment	—	16,876	—	5,212	168	700
Inverhuron .....	Natural Environment	173,820	122,071	13,122	25,855	324	2,000
Point Farms .....	Recreational Park	80,696	119,431	6,490	12,754	200	1,600
Sauble Falls .....	Recreational Park	130,394	142,113	11,434	20,614	146	—
LINDSAY							
Balsam Lake .....	Recreational Park	69,797	99,727	17,944	19,740	320	1,500
Darlington .....	Recreational Park	109,006	148,602	20,637	26,425	400	1,000
Emily .....	Recreational Park	149,072	109,336	14,863	16,417	275	1,150
Ferris .....	Recreational Park	—	—	—	—	—	—
Mark S. Burnham .....	Recreational Park	12,433	12,342	—	—	—	—
Presqu'île .....	Natural Environment	238,946	276,791	30,929	33,925	500	7,000
Serpent Mounds .....	Natural Environment	175,188	148,323	16,476	18,491	130	800
NORTH BAY							
Antoine .....	Recreational Park	9,864	8,885	1,354	769	29	—
Finlayson Point .....	Recreational Park	36,244	57,293	7,334	8,222	135	216
Marten River .....	Recreational Park	43,047	67,577	11,167	11,306	224	1,000
Samuel de Champlain .....	Natural Environment	59,666	53,938	8,413	10,026	224	1,400
PARRY SOUND							
Arrowhead .....	Recreational Park	57,562	62,046	12,023	11,149	253	900
Grundy Lake .....	Natural Environment	170,454	175,549	43,759	31,907	537	3,800
Killbear Point .....	Natural Environment	306,967	308,733	55,174	40,438	939	14,000
Mikisew .....	Recreational Park	43,213	54,610	13,415	8,568	256	1,500
Oastler Lake .....	Recreational Park	196,370	153,279	21,213	17,831	170	600
Restoule .....	Natural Environment	41,466	24,365	11,109	5,316	229	4,000
Sturgeon Bay .....	Recreational Park	65,111	34,822	9,896	7,622	89	150

Comfort Stations (Flush Toilets)	Picnic Area (Acres)	Museums, Exhibit Centres	Nature, Hiking Trails (Miles)	Boat Launch Ramps	Trailer Sanitary Stations
X	83	—	—	X	X
X	8	—	—	X	X
—	2	—	—	—	—
X	16	—	—	X	X
X	20	EC	6	X	X
—	4 <sup>1</sup> / <sub>2</sub>	—	—	—	—
—	15	—	—	X	X
X	40	M	13 <sup>3</sup> / <sub>4</sub>	X	X
—	12	—	—	X	X
X	29	—	—	X	X
X	33	—	—	X	X
X	12	EC	—	—	—
—	4	—	10	X	—
X	19 <sup>1</sup> / <sub>2</sub>	EC	1 <sup>3</sup> / <sub>4</sub>	X	X
X	10	—	—	X	X
X	9 <sup>1</sup> / <sub>2</sub>	—	—	—	X
X	25	—	1	X	X
X	120	M	—	X	X
X	25	—	—	X	X
—	20	—	—	—	—
—	4	—	—	—	—
X	110	M	3	—	X
X	30	EC	—	X	X
—	13	—	—	X	X
X	4 <sup>1</sup> / <sub>2</sub>	—	—	X	X
X	46	—	—	X	X
—	15	EC	9 <sup>1</sup> / <sub>4</sub>	X	X
X	1	—	—	X	X
X	8	—	2	X	X
—	30	—	4 <sup>1</sup> / <sub>2</sub>	X	X
—	10	—	—	X	X
X	2	—	—	X	X
—	—	—	—	X	X
—	1 <sub>4</sub>	—	—	X	X

continued.

and a number of new park reserve areas were established through land acquisition and the setting aside of Crown lands. Particular emphasis is given to the provision of a broad spectrum of park types as conceived under the 1967 Ontario provincial park classification and park land zoning policy. The goals, development and management guidelines, and activities, for each area, are expressed through the preparation of detailed park master plans.

## PARK PLANNING AND DEVELOPMENT

Master-planning continued in six provincial parks. The experience gained from the public hearings and briefs submitted on The Provisional Master Plan for Algonquin Park has indicated the need for much deeper study and more detailed information on which to base future master plans.

Site planning was done for sixty parks and park areas. Plans for six new park entrances were completed, and one was built. The program of upgrading park entrances is continuing. Development appropriations of \$3,500,000 were allocated for individual projects in 107 operating parks and park reserves. Development again was pointed toward upgrading existing facilities, particularly water supplies and sanitation facilities in operating parks. The installation of trailer electrical outlets was initiated in twelve operating parks. Designs and plans were developed for three new park buildings.

Kettle Lakes Provincial Park. Photo by L. Walton.



# RECORD OF PARK USE AND PARK FACILITIES IN 97 PROVINCIAL PARKS

Park District	Park Classification	Visitors		Campers		Camping Units	Swimming Beaches (Feet)
		1968	1969	1968	1969		
PEMBROKE							
Algonquin .....	Natural Environment	632,823	658,785	115,579	93,991	1,395	3,900
Bonnechere .....	Recreational Park	8,860	8,399	1,308	5,690	58	1,000
Carson Lake .....	Recreational Park	10,367	5,642	3,302	5,158	47	150
Driftwood .....	Recreational Park	6,969	9,431	6,818	6,418	98	4,000
SAULT STE. MARIE							
Batchawana .....	Recreational Park	21,950	19,669	—	—	—	8,100
Mississagi .....	Natural Environment	27,577	32,266	3,180	3,949	80	1,800
Pancake Bay .....	Recreational Park	124,201	124,051	23,860	28,959	278	10,800
SIOUX LOOKOUT							
Ojibway .....	Recreational Park	1,880	6,927	1,239	1,828	72	300
Pakwash .....	Recreational Park	6,235	4,272	1,143	1,376	59	5,300
SUDBURY							
Chutes .....	Recreational Park	64,756	58,819	11,763	16,008	92	550
Fairbank .....	Recreational Park	57,948	70,048	5,545	11,025	132	1,300
Killarney .....	Natural Environment	45,524	58,065	3,143	5,307	125	600
Windy Lake .....	Recreational Park	71,544	73,483	2,582	6,390	76	5,000
SWASTIKA							
Esker Lakes .....	Natural Environment	20,261	27,147	3,536	4,336	136	1,200
Kap-Kig-Iwan .....	Natural Environment	27,684	30,411	3,647	4,163	64	—
THUNDER BAY							
Inwood .....	Recreational Park	25,670	61,767	6,794	14,822	60	100
Kakabeka Falls .....	Natural Environment	252,125	274,715	21,831	32,742	140	1,800
Middle Falls .....	Recreational Park	35,426	15,895	3,166	4,443	20	—
Sibley .....	Natural Environment	45,885	55,135	3,977	17,136	195	2,000
TWEED							
Black Lake .....	Recreational Park	54,089	61,495	8,545	12,988	200	500
Bon Echo .....	Natural Environment	134,769	138,991	17,767	25,665	400	2,300
Lake on the Mountain	Recreational Park	—	—	—	—	—	—
Lake St. Peter .....	Recreational Park	29,639	26,675	2,805	6,867	60	1,000
North Beach .....	Recreational Park	46,477	68,332	—	1,643	—	4,000
Outlet Beach .....	Natural Environment	379,271	315,761	27,363	28,304	482	10,900
Sandbanks .....	Natural Environment	45,009	58,299	—	—	—	26,400
WHITE RIVER							
Lake Superior .....	Natural Environment	147,699	111,684	35,727	43,260	355	13,200
Obatanga .....	Natural Environment	15,300	21,884	10,177	11,566	85	1,600
White Lake .....	Recreational Park	79,429	74,992	14,057	23,018	225	3,600
PROVINCIAL TOTALS							
		9,440,211	10,459,936	1,119,912	1,360,639	18,039	320,638



## PARK MANAGEMENT

Ninety-seven Provincial Parks were in operation during the 1969 park season. This included Cyprus Lake Provincial Park, in operation for its first season. This Natural Environment park contains 1,149 acres situated on the northeast coast of the Bruce Peninsula, about six miles southeast of Tobermory. It contains the spectacular cliffs and vistas of the Georgian Bay coast, made available to visitors from a section of the Bruce Trail, as well as inland lakes, forests and bogs.

A considerable increase in park use was experienced in the 1969 camping season. The number of visitors increased by 10.8 per cent, while the number of campers leaped by 21.4 per cent from that of 1968. This shows an obvious recovering from the previous year's slump of seven per cent in day-use and three per cent in campers, for a substantial net gain this year.

### INTERPRETIVE SERVICES

Interpretation of natural and cultural resources to visitors in Provincial Parks is gradually developing into a program of services which is outstanding among comparable North American park systems. The interpretive goals are to transmit information about the environment, primarily to park visitors, and thereby to motivate wise use of resources, stimulate appreciation of park facilities, and enhance the visitors' recreational experience.

Since 1944, when the interpretive program was begun, the annual number of interpretive contacts made with the public has increased to three-quarters of a million individual messages. This spectacular growth has thus been more rapid than the growth in total annual visits to the parks. However, as increasing numbers of outdoor recreationists come from city centres, they require additional informational-educational services for their proper orientation to park facilities and their enjoyment of the outdoors.

Moreover, in serving sheer masses of recreationists, the Department must seek public participation in protecting the public trust; and interpretive messages have proven to be an important means of tackling conservation problems such as wilderness littering, overcrowding, and vandalism. By interpretive services, increased protection has been won for fragile components of the park environments, and current projects are helping to combat abuse of wild flowers and threatened faunal species.

Important program additions in 1968 include the development of an audio-visual program on wilderness camping behaviour for presentation at Quetico and Algonquin Parks. This film has been directly related to a substantial decline in interior littering in both parks.

Comfort Stations (Flush Toilets)	Picnic Area (Acres)	Museums, Exhibit Centres	Nature, Hiking Trails (Miles)	Boat Launch Ramps	Trailer Sanitary Stations
X	7	M EC	27	X	X
—	1	—	—	X	X
—	1	—	—	X	X
—	1	—	—	X	X
—	10	—	—	—	—
—	8 <sup>3</sup> / <sub>4</sub>	—	1 <sup>1</sup> / <sub>2</sub>	X	X
—	8 <sup>1</sup> / <sub>2</sub>	—	—	—	X
—	7	—	2	X	X
—	7	—	—	X	X
—	10	—	1	—	X
—	12	—	1	X	X
—	2	—	7	X	X
—	100	—	—	X	X
—	35	EC	5	X	X
—	30	EC	4	—	X
—	2	—	—	—	X
X	32	—	3 <sup>1</sup> / <sub>2</sub>	—	X
X	6	—	—	—	—
—	25	—	15 <sup>1</sup> / <sub>2</sub>	X	X
X	10	—	—	X	X
X	35	—	4	X	X
X	4	—	—	—	—
—	5	—	2	X	X
—	60	—	—	X	—
X	200	—	—	X	X
—	40	—	—	—	—
—	43	EC	5	—	X
—	10	—	1 <sup>1</sup> / <sub>4</sub>	X	X
X	8	—	<sup>1</sup> / <sub>2</sub>	X	X
2,343 <sup>1</sup> / <sub>2</sub>			172 <sup>1</sup> / <sub>2</sub>		

Services were expanded in Parry Sound Forest District with the appointment of a planner-naturalist to the park staff; and seasonal staff members participated with permanent interpretive naturalists in a five-day training session intended to upgrade interpretive skills.

Research data was gathered in an ambitious program of environmental analysis for both parks facility planning and interpretive messages. Beside an intensive, broadly-based data collection program expanded for Algonquin Park, historical and archaeological material was researched at each of the following parks and reserves: Lake Superior, Mattawa River, Samuel de Champlain, Fort La Cloche, Methodist Point, Sibbald Point, Peterborough-Petroglyphs, Darlington, and Polar Bear.

## NATURE RESERVES

Nature reserves are Class V parks as described under the Park Classification System (1967), or they may be zones within other classes of park. These designated reserves will be living museums, encompassing both unique and representative segments of our flora, fauna, geology and physiography. Nature reserves serve an important role in research and education when such use does not damage the values the reserve was established to protect.

To assist the Branch in this program, there is an advisory committee to the Minister, consisting of experts in all fields of the natural sciences and representing naturalists in the public sector. This committee is working with the Branch to establish an outline of a system of nature reserves, an indication of the broad fields of interest and study which should be represented. They also concern themselves with recommending specific areas which should be established.

A start was made, in the summer of 1969, on the natural surveys of park areas with an ecologist spending the summer investigating, identifying, and reporting on potential Natural and Primitive Zones in Algonquin Park, thus contributing to the data necessary for the planning of that park.

## SNOWMOBILE TRAILS

Ontario Provincial Parks were made available, where possible, for snowmobiling during the winter of 1969-70. It was necessary to prohibit or restrict the use of snowmobiles in certain parks to protect the wilderness environment, deer wintering areas, or fragile ecological, geological and historic areas within these parks. Damage to landscape and dune stabilizing plantings, young forest growth and lawns was reported in some parks, particularly in southern Ontario, due to insufficient snow cover or heavy use. Damage was

also incurred when snowmobiles entered prohibited zones including nature trails and other areas of fragile ground cover.

Snowmobiles were prohibited in Sandbanks, Serpent Mounds, Killbear and Springwater Provincial Parks.

Snowmobiles were restricted in:

1. Algonquin Provincial Park—to travel only on Canoe, Cache, Bonita, South Tea and Smoke Lakes.
2. Lake Superior Provincial Park—to travel only on the Midjin Lake road and Midjin, Magwon, Almonte, Wabigoon and Mirimake Lakes.
3. Quetico Provincial Park—to travel only on those lakes forming the north and south boundaries of the park.

Specific trails for snowmobiling were marked out in a number of parks in central and southern Ontario. In addition, the cross-country trails in the Coldwater and Parry Sound areas received increased use.

## ACCESS POINTS

During 1969, maintenance and improvements were carried out on 500 public access points across the province. These facilities are intended to supplement the provincial park system in providing access to a greater number of our major waterways and include boat launching ramps, vehicle parking areas, toilets and garbage receptacles. No overnight camping or prolonged boat dockage is permitted at these locations which are serviced regularly throughout the summer season.

Improvements, completed on 230 separate sites in 1969, included the construction of 59 boat ramps, 24 loading docks and 39 toilets. Protection of our total environment is a major consideration in the development and maintenance of access points. These maintenance crews collect garbage wherever it is encountered on Crown lands.

## CANOE ROUTES

The program of documenting, mapping and improving of portages on major canoe routes across the province was continued in 1969. A considerable number of detailed route descriptions are now available for both northern and central Ontario.

## HIKING TRAILS

The existing hiking trails established on Crown lands are receiving an increasing amount of public use, and additional trails are in the planning stage. Three overnight trail shelters were constructed along the Bruce Trail on the Niagara Escarpment. A number of trails, with picnic stops and toilets, were developed on Agreement Forest areas.

# FOREST PROTECTION BRANCH



*Turbo Beaver dropping fire retardant.*

Forest Protection Branch is divided into three sections with duties and responsibilities as follows.

## FOREST PROTECTION

*Forest Fire Control:* Administration of The Forest Fires Prevention Act; organization of fire districts and the fire warden system; supervision of fire control planning and preparedness; fire prevention programs including a system of travel, fire and work permits; co-operative fire prevention and control agreements with municipalities, railways, forest industries and other agencies; detection of forest fires, and fire danger warnings; training of staff and co-operators in fire control techniques; prescribed burning; co-ordination of fire suppression; and movement of resources and emergency arrangements.

*Forest Pest Control:* Prevention and control of damage by insects, diseases and other pests affecting forests under Department management; and advisory services.

*Communications:* Planning, installation and operation of radio, telephone and teletype services for fire control and other Department requirements; and construction of specialized communication equipment.

## AIR SERVICE

Operation of a fleet of aircraft to meet flying requirements of the Department and special needs of other Government Departments; selection and training of pilots and air engineers; deployment of aircraft and crews; establishment of airbases, fuel distribution and caches; selection of aircraft equipment and development of special equipment; leasing and disposition of helicopters and other aircraft; checking pilot proficiency; and maintenance of aircraft.

## ENGINEERING SERVICES

Planning mechanical equipment programs, budgeting for new and replacement equipment, standards for operation and maintenance of mechanical equipment, and vehicle fleet management; design, construction and maintenance of dams, docks, and other hydraulic structures, channel improvement, and dredging; co-ordination and planning of capital work program and maintenance of facilities; and sign program.



# FOREST PROTECTION SECTION

## FOREST FIRE CONTROL

The 1969 fire season followed the two relatively light 1967 and 1968 seasons. Review of the statistics show that the 1969 season ranks fifth in the least number of fires since the inception of formal record keeping in 1917. The second lowest, total acreage burned and second lowest, average fire size were also recorded for the season.

Rain occurred more often and in greater amounts than normal throughout the provincial fire district. Fire danger ratings did not reach high and extreme readings for extended periods. The over-all result was that fires which did occur did not spread rapidly and, with very few exceptions, did not present any control problems. Problem fires occurred in the Northwestern Region during the last week in May during one of the few periods when burning indices were high to extreme.

## FOREST FIRE CAUSES AND OCCURRENCE

A total of 901 fires burned 6,134 acres during 1969. This is the least number of fires since 1954. The acres-burned total is the lowest since 1959. Damages were correspondingly low.

People were responsible for 78 per cent of the fire starts. These fires burned 30 per cent of the total acreage. Lightning accounted for 22 per cent of the fire ignitions, burning 70 per cent of the total acreage. These figures compare with the historic average of 80 per cent of the fires in Ontario being caused by human carelessness.

The peak occurrence period was the months of April and May during which 39 per cent of the fires occurred. During this period, 90 per cent of the total acreage was burned. The occurrence and acres-burned are well below the 10-year average of 1,326 fires and 139,621 acres. The 1969 figures are also well below the previous five-year average of 1,342 fires and 22,683 acres.

## FOREST FIRE CONTROL OPERATIONS

*Detection.* The evaluation of detection systems continued in the fire districts. Seven forest districts used aircraft as the primary means of detection supplemented by towers in high-value areas requiring constant surveillance. This system has proven effective in the study areas.

A portable fire tower was purchased, and evaluation of this equipment for detection in high-value or risk areas was

begun. Further testing will be carried out during the 1970 season.

*Suppression.* The fire control philosophy of early detection and fast, hard hitting initial attack aided by the poor burning conditions, produced a provincial, average fire size of 6.8 acres. This average is considerably less than the previous 10-year average of 10.8 acres.

Only two fires reached a final size of more than 500 acres. Approximately 54 per cent of the fires were extinguished at less than one-quarter acre in size.

The basic Lands and Forests suppression force is 120 five-, or seven-man-unit crews supported by thirty-eight fire bombing aircraft. This force took initial action on 641 fires this season. Municipal groups, organized under the fire warden system, handled 119 fires. The general public took initial action on 128 fires with the remaining 13 taken care of by timber licensees or other agencies.

Fire bombing aircraft were successful on many fires. They provided the initial attack on 61 fires and supported the action of ground crews on a great proportion of the fires. The initial attack capability of these aircraft make it possible to effectively hold a fire until ground crews can begin to work on the fire edge.

## FIRE CONTROL TRAINING

Fire Suppression Course I was held on a Regional level again this year. Sixty-three personnel successfully completed the course this year, bringing the total number of graduates to 444 since 1962 when this course was first offered.

Fire Suppression Course 2, a course in advanced fire behavior, organization and management, was organized and presented to senior fire control personnel in the Province. A total of thirty-three people, consisting of forest protection supervisors, fire control officers, chief rangers and head office operating personnel, successfully completed the course. Plans are being made to expose more fire control personnel to the course next year.

The portable fire simulator, designed and built by Lands and Forests staff, was introduced to the personnel attending Fire Suppression Course 2. Four programs were presented to the candidates in the first use of this training aid for course work. Arrangements are being made to acquire two more portable simulators and continue the development of the present one during the 1970-71 fiscal year.

Staff attended courses in the United States in fire management, and one man attended a three-week course in aircraft management in fire control sponsored by the United States Forest Service.

## FOREST FIRES BY CAUSES, 1969

General Causes	Fires	Acres
Lightning .....	202	4,278
Industrial—Logging .....	7	10
Industrial—Other .....	21	28
Recreation .....	256	233
Railway .....	78	522
Resident .....	128	515
Incendiary .....	9	56
Miscellaneous .....	191	473
Unknown.....	9	19
<b>TOTAL .....</b>	<b>901</b>	<b>6,134</b>

Sources of Ignition	Fires
Lightning .....	202
Smoking Material .....	212
Camp Fires .....	139
Grass Burn .....	32
Rubbish Burning .....	31
Unknown.....	27
Matches .....	65
Brush Burn .....	23
Garbage Dump Burn .....	24
Right-of-way Burning .....	6
Brake shoe .....	34
Diesel Locomotive .....	21
Fusee .....	8
Tie Burning .....	1
Structural Fire.....	14
Power Line (Short Circuit).....	13
Sparks from chimney .....	1
Fireworks .....	18
Power Saw .....	3
Mechanical Equipment .....	7
Spark from Burner.....	1
Burning Bulldozed Piles.....	1
Explosives .....	1
Dumped Live Coals or Ashes .....	3
Miscellaneous (known) .....	13
Prescribed Burning .....	1
<b>TOTAL .....</b>	<b>901</b>

## FIRE PREVENTION

Several forest districts in the province combined resources to present information on fire conditions and danger to the public over C.B.C. television stations from Winnipeg, Timmins and Barrie. The radio and press media were used to convey any local forest fire information of interest to residents in their coverage area.

Investigation of a different type of prevention poster, using symbolic representation, was undertaken. New ideas

Responsible Groups	Fires
Lightning .....	202
Fisherman .....	118
Children .....	85
Car Passenger.....	79
Unknown.....	43
Berry Picker.....	23
Camper.....	30
Resident Rural .....	53
Hunter .....	15
Farmer .....	14
Private Cottager.....	33
Hiker .....	27
Resident Urban .....	8
Other Industrial Employee .....	4
R. R. Section Crew .....	6
R. R. Train Crew .....	63
R. R. Work Crew .....	5
Canoeist .....	10
Picnicker .....	10
Train Passenger .....	1
Indian (on reserve) .....	7
Woods Industry Employee.....	5
Land Survey Party .....	1
Trapper .....	4
Prospector .....	1
Mining Employee .....	2
Hydro Employee .....	5
Highway or Road Employee .....	4
Municipal Employee .....	2
Military .....	1
Miscellaneous .....	34
L & F Employee .....	2
Federal Govt. Employee .....	1
Youth Groups .....	3
<b>TOTAL .....</b>	<b>901</b>

for prevention work were solicited from field staff, and the result of both of these undertakings should be available for partial use during the 1970 fire season.

The four-minute C.B.C. radio program on Lands and Forests activities, broadcast on their northern network, provided a medium to advise the public in that area of the provincial fire picture and the forecasted fire danger index.

Legislation, establishing restricted fire zones, was enforced on a seasonal basis in the Wawa fume-damaged area of White River Forest District. During one of the rare, high fire danger periods, a restricted fire zone was imposed in Fort Frances Forest District for a period of one week.

## DEVELOPMENT WORK

*Retardant Chemicals.* The planned operational evaluation of the aerial delivery of fire retardant chemicals was affected by the light fire season. Work progressed on the mixing and storage of these chemicals for delivery by Department float-equipped fire bombing aircraft, and evaluation drops were made on test fires with satisfactory results. Further operational studies will continue during the 1970 season.

Field tests also proved the usefulness of long-term retardants delivered from ground tankers.

## FOREST FIRES BY DISTRICTS, 1969

Forest District	Fires	Acres
Sioux Lookout .....	24	53
Kenora .....	57	130
Fort Frances.....	29	616
Port Arthur .....	58	3,080
Geraldton .....	30	235
Kapuskasing .....	16	24
Cochrane .....	13	49
Swastika .....	27	51
White River.....	25	22
Chapleau .....	29	10
Sault Ste Marie .....	59	103
Sudbury .....	162	744
North Bay.....	58	276
Parry Sound.....	83	136
Pembroke .....	64	328
Tweed .....	81	167
Kemptville .....	13	10
Lindsay .....	54	43
Lake Huron .....	6	48
Lake Simcoe .....	13	9
TOTAL .....	901	6,134

## FOREST FIRES BY MONTH, 1969

Month	Fires	Acres
April .....	128	946
May .....	219	4,727
June .....	84	139
July .....	142	60
August .....	227	170
September .....	82	74
October .....	18	18
November .....	1	—
TOTAL .....	901	6,134

## FOREST FIRES BY SIZE, 1969

Size	Fires
¼ Acre and under .....	474
Over ¼ acre to 10 acres .....	383
Over 10 acres to 100 acres .....	36
Over 100 acres to 500 acres .....	6
Over 500 acres .....	2
TOTAL .....	901

## FOREST FIRES BY MEANS OF DETECTION, 1969

Means of Detection	Fires
Lands and Forests Fire Tower .....	188
Lands and Forests Aircraft .....	96
Commercial Aircraft.....	27
Private Aircraft .....	9
Lands and Forests Personnel.....	48
Other Provincial Government Employee .....	44
Outside Agency Fire Tower .....	2
Other Public .....	487
TOTAL .....	901



*Southern Ontario Forest Fire Hazard Study.* An investigation of the changes in the forest fire hazard, in the portion of the province south of the provincial fire district, was undertaken. The result was a report and a documented set of slides on the potential fire hazard in the southern part of Ontario.

*Canadian Fire Weather Index.* A new index to measure fire danger has been developed by the federal Department of Fisheries and Forestry. Ontario took part in the field evaluation of this new system by calculating and recording the fire weather stations throughout the province for the 1969 fire season. Reaction to the new system was favorable, although fire occurrence during the summer was light and no real opportunity to evaluate fire behavior under the new index values existed.

## PREScribed BURNING

Consistent with the expanding prescribed burning program in the province over the past few years, seven districts carried out prescribed burns this year. A total of 5,933 acres were burned by prescribed fires for silvicultural treatment and slash hazard reduction.

## STATEMENT OF FIRE DAMAGE, 1969

Forest District	Mer- chandise Cost	Forest Losses \$	Immature Losses \$	Non Forest Losses \$	Total Losses \$
Sioux Lookout .....	11,780	670	—	—	670
Kenora .....	4,420	197	338	265	800
Fort Frances .....	967,000	44,700	75	1,255	46,030
Port Arthur .....	1,426,979	53,325	18,875	379	72,579
Geraldton .....	43,605	1,279	852	499	2,630
Kapuskasing .....	—	—	—	180	180
Cochrane .....	—	—	—	—	—
Swastika .....	—	—	50	—	50
White River .....	4,265	92	212	592	896
Chapleau .....	—	—	12	—	12
Sault Ste Marie .....	—	—	40	290	330
Sudbury .....	11,306	535	5,675	847	7,057
North Bay .....	—	—	25	—	25
Parry Sound .....	—	—	118	—	118
Pembroke .....	65,200	285	2,402	232	2,919
Tweed .....	300	22	12	27	61
Kemptville .....	—	2	65	—	67
Lindsay .....	—	—	200	57	257
Lake Huron .....	—	—	—	—	—
Lake Simcoe .....	—	—	75	—	75
<b>TOTAL .....</b>	<b>2,534,855</b>	<b>101,107</b>	<b>29,026</b>	<b>4,623</b>	<b>134,756</b>

## GENERAL

Nozzle crew competitions were held on a regional basis for the first time this year. The purpose of the competitions is to maintain a high level of proficiency in preparedness and fire line construction and to encourage a team spirit among the fire fighters of the Department. The regional winners were:

Northwestern Region — Kenora District  
 Northeastern Region — Swastika District  
 Southern Region — Tweed District.

## FOREST PEST CONTROL

### SURVEYS

Outbreaks of the spruce budworm, the most destructive forest insect in Canada, occur periodically, and over the past two or three years there have been indications of a general upswing in populations throughout eastern Canada. In Ontario, this has been evident west of the lakehead in Thunder Bay Forest District, at several locations throughout northeastern Ontario, and down the Ottawa Valley.

In northwestern Ontario, as reported last year, the area sprayed in 1968 had a surviving population of budworm in the core area near Burchell Lake, and at French Lake in the northeast corner of Fort Frances Forest District. These areas were re-sprayed in 1969 (see section on control). In addition, a new area of infestation of about 4,000 acres was discovered south of Northern Light Lake near the Minnesota border. It is believed that this new infestation may be associated with the widespread infestation in Minnesota.

In northeastern Ontario, the most important of many widely scattered infested areas was a block of almost 2,000 square miles, north and northeast of the Town of Chapleau. Because there was not any hope of justifying aerial spraying to prevent the development of infestations throughout the vast area of northeastern Ontario, largely because of the cost/benefit relationships resulting from low over-all balsam and white spruce values, the area is being studied from the standpoint of future spraying to keep strategic areas of trees alive and green. Some selective spraying may be necessary in 1970 to prevent serious damage to valuable stands which will have had three years of feeding by the budworm. Forecasts are for expanded and intensified infestations in 1970.

In southeastern Ontario, the spruce budworm caused noticeable defoliation of white spruce and balsam trees throughout many areas of the Ottawa Valley, in total almost 1,200 square miles. One of the areas infested is a portion of the Larose Forest, southeast of Ottawa, containing several hundred acres of valuable white spruce stands. Because of the extent of defoliation already present, this area is being studied for possible spraying in 1970.

Epidemics of the jack-pine budworm occur frequently in northwestern Ontario, but fortunately the insect has not had a history of causing serious damage to commercial stands of jack pine in that area. In 1969, the current infestation in the northwest declined to an insignificant level. Infestations in the east are much less frequent, but the current epidemic in central and eastern Ontario is perhaps the most severe on record. In view of forecasts for continuing high populations during 1969, some spraying was necessary to avoid serious damage and mortality of jack-pine stands. Except in the areas sprayed, continuing high populations are forecast for 1970, particularly in the French River-Lake Nipissing area, and in the Lake Traverse area of Pembroke Forest District.

The forest tent caterpillar continued to defoliate stands of poplars west and north of the Town of Fort Frances, covering an area of more than 400 square miles. The infestation along the southern portion of Sault Ste. Marie Forest

District declined to an area of 200 square miles, and this infestation is expected to die-out in 1970.

The European pine sawfly did not add significantly to the main body of its range in southern Ontario, the eastern boundary being a line roughly from Midland to Kingston. The insect also occurs on Manitoulin Island, and on ornamental plantings in the Cities of Sault Ste. Marie, North Bay and Ottawa.

The saddled prominent is a native insect which in the past has rarely occurred in serious outbreaks in Ontario. The current series of outbreaks in sugar maple stands in many areas of southern Ontario, the most severe on record here, were described in some detail in last year's report. For the most part, infestations in Lake Huron Forest District declined, and remained about the same in Lake Simcoe Forest District, while new small infestations appeared in the southern part of Lindsay Forest District, and the large infestation (900 square miles) in Parry Sound Forest District spread westward and northward but declined along the eastern boundary. This insect is subject to effective natural enemies, including parasites, diseases and predators, and therefore outbreaks usually do not persist for more than two or three years in any locality.

The Dutch elm disease, as noted last year, is now well established as far north as Sudbury and Sault Ste. Marie, and further spread northward, where elm trees are widely scattered in the forest, will be slow. Consequently, there was no significant change in the geographic range of Dutch elm disease in 1969, but where it does occur the trees were killed at an accelerated rate.

During 1969, there was no change in the status of two relatively new disease problems—the annosus root rot and the scleroderris canker.

Extensive damage of an uncommon type occurred in late August when a wind storm caused a massive blowdown north of the Town of Hearst. The blowdown swath was 10 miles wide and about 65 miles long. Progress is being made in salvaging the timber.

## CONTROL OPERATIONS

As mentioned in the 1968 report, a residual population of spruce budworm remained in the core area of the large Burchell Lake - Shebandowan outbreak sprayed in June, 1968. In 1969, a block of 22,000 acres was sprayed with fenitrothion, about 8,400 acres of which received two applications, each at 5.7 oz. per acre, and the remainder received one application. The 5,000-acre infestation at French Lake was also sprayed twice at the 5.7 oz. rate. The sprays were fully effective in bringing the persistent infestations under



control, and no defoliation in these areas is forecast for 1970.

Spraying, to control the jack-pine budworm in valuable stands, was conducted in two locations in Sault Ste. Marie Forest District, one of 2,000 acres of mixed red and jack pine plantations in the Kirkwood Management Unit, and one involving 2,000 acres of natural jack pine stands at Mount Lake. A single application of fenitrothion was applied at 4.3 oz. per acre. The Department also assisted in the spraying operations against the jack pine budworm on the Petawawa Forest Experiment Station and on the Canadian Forces Base (Petawawa).

The regular program to control the white pine weevil continued in 1969, with approximately 4,600 acres being treated with aerial and ground spraying equipment, and by hand-clipping and burning infested leading shoots. When spraying is conducted, the insecticide used at present is methoxychlor.

Almost 9,000 acres of pine and spruce plantations were sprayed for control of sawflies, principally the red-headed pine sawfly, the European pine sawfly, the jack pine sawfly and the yellow-headed spruce sawfly.

For many years, the Department has used, and has encouraged private growers to use, a special virus disease to control the European pine sawfly in situations where this biological control agent can be used efficiently. To date, the Department has been the principal source of supply of the virus, and in 1969 a special effort was made to build up reserves through collecting the material in the field. Sufficient virus was collected to spray 2,000 acres.

About 500 acres of sod-covered sites were treated for control of white grubs at time of tree planting, and 600 acres of similar sites were treated for control of mice where these pests threatened the survival of young plantations.

The major tree-killing disease in the forests of Ontario is the blister rust of white pine. A substantial disease-control program has been in progress for several years in specific areas managed for production of white pine. The disease is controlled by using the herbicide 2,4,5-T as a spot spray to kill the other plants (wild currants and gooseberries) necessary in the disease's life cycle. In 1969, about 9,500 acres of high-value young white pine stands were protected against the rust in parts of the Sault Ste. Marie, North Bay, Pembroke, Lindsay, Tweed and Kemptville Forest Districts.

The entrance of annosus root rot into southern Ontario plantations is prevented by the application of sodium nitrite to the freshly cut surface of stumps during thinning operations. In 1969, some 1,800 acres were treated in this way.

## COMMUNICATIONS

The Department's program of change-over, from A.M. to S.S.B. (Single Side Band) High Frequency communications, progressed to the point where all District Office radio stations using H.F. are equipped. Fourteen transceivers in the power range 100-150 watts P.E.P. (Peak Envelope Power) are in operation. Additionally, a 1000-watt P.E.P. S.S.B. transmitter and associated receivers (6) installation is in operation on an evaluation basis at the Control Radio Station at Maple. S.S.B. installations were effected in several more of the Department's Turbo Beaver aircraft and, by spring of 1971, all 28 machines will be fitted with 10-channel, 100-watt P.E.P. equipment.

V.H.F. "problem area" coverage was greatly improved in the Kapuskasing, Cochrane and Geraldton districts by installations of 270-290 foot towers at all points and the use of collinear antenna arrays. A new headquarters installation was made at Terrace Bay using a 270-foot tower and a collinear antenna system. V.H.F. radio-telephones were installed at two new Provincial Parks near the Ontario/Quebec border and two more installations made at new offices in Simcoe and Fonthill in southern Ontario.

Major expenditures included 73 V.H.F. mobile radio-telephones with power outputs of three to 50 watts for use by all services, five Biotelemetry receivers for use by Fish and Wildlife Branch, and the radio equipment for use with an experimental, remote weather reporting system.

*Fire in the forest. Photo by T. Jenkins.*





## AIR SERVICE SECTION

During 1969-70 the aircraft replacement program included the purchase of a Series 300 Twin Otter water bomber and replacement of the Series 100 Twin Otter Business machine with a new Series 300 Twin Otter with greater speed, pay load and range capabilities.

The Section currently maintains a fleet of 40 aircraft, operated out of 26 bases, to meet flying requirements of the Department and special needs of other Government departments.

The Beechcraft Duke and one Turbo Beaver were equip-

ped during 1969 to carry infra-red fire detection equipment.

Total flying time for the year accumulated on Department aircraft was 15,797:05 hours. Total passengers carried were 36,080, and the total load carried was 13,250,531 pounds.

Mercy and emergency flights, totalling 161:40 hours, were carried out by aircraft and helicopters. There were no requests from other provinces for assistance during fire emergencies under co-operative mutual aid agreements.

Five Bell 47G4 model Helicopters were leased from May 1st to September 30th to provide transportation in forest fire fighting.

### HOURS FLOWN ON VARIOUS PHASES OF FLYING OPERATIONS 1969-70

	Lands & Forests Aircraft	Commercial			Total
		Fixed Wing	Helicopter (Contract)	Helicopter (Other)	
Detection .....	1,689:50	1,777:07	—	—	3,466:57
Suppression .....	544:35	118:43	897:25	23:00	1,583:43
Servicing .....	142:45	—	—	—	142:45
Water dropping .....	447:20	2:45	—	—	450:05
Fire Ranging, Total .....	2,824:30	1,898:35	897:25	23:00	5,643:30
Timber .....	1,472:30	126:24	326:10	13:50	1,938:54
Fish and Wildlife .....	4,324:30	310:26	422:00	37:55	5,094:51
Lands .....	678:20	66:30	201:50	12:15	958:55
Parks .....	727:45	5:30	67:25	—	800:40
Research .....	334:25	—	5:15	—	339:40
Interdepartmental .....	977:00	179:55	:35	—	1,157:30
Administration .....	4,458:05	5:10	270:45	44:15	4,778:15
Total .....	15,797:05	2,592:30	2,191:25	131:15	20,712:15

	Lands & Forests Airc raft	Commercial			Total
		Fixed Wing	Helicopter (Contract)	Helicopter (Other)	
<i>Breakdown of administration</i>					
Mercy Flights .....	116:20	—	1:05	44:15	161:40
Ferrying & Instruction .....	260:25	—	159:10	—	419:35
Entomology.....	136:05	—	44:30	—	180:35
Forced Landings & Operation .....	704:25	—	—	—	704:25
Transportation .....	3,240:50	5:10	66:00	—	3,312:00
Administration, Total .....	4,458:05	5:10	270:45	44:15	4,778:15

# MERCY AND EMERGENCY FLIGHTS, 1969-70

Date	Aircraft	Pilot	Journey	Time	Reason
April 21, 1969 .....	CF-OPA	THOMPSON	Spruce Lake-Sault Ste Marie	:45	Man with severe abdominal pain
May 3, 1969 .....	CF-OET	BEAUSHENE	Downsview-Sault Ste Marie	4:25	Ill infant and nurse
May 7, 1969 .....	CF-ODP	BURTT	Port Arthur-Winnipeg	6:55	Ill woman to Winnipeg for neurosurgery
May 21, 1969 .....	CF-OEI	BEAUSHENE	Spruce Lake-Sault Ste Marie	:50	Man with hand injury to hospital
July 3, 1969 .....	CF-OEL	GOOD	McKenzie Lake-Port Arthur	1:50	Man with compound fracture to hospital
July 3, 1969 .....	CF-OEP	McLELLAN	Ice Chest Lake-South Porcupine	:25	Man with broken back
July 15, 1969 .....	CF-OPA	KIRK	Kirk's Cove-Belleville	2:10	Ill man to hospital
Aug. 1, 1969 .....	CF-OEL	GOOD	McKenzie Lake-Sioux Lookout	1:00	Victim of car accident
Aug. 2, 1969 .....	CF-OEL	GOOD	Sioux Lookout-McKenzie Lake	:55	Return trip with O.P.P. constable
Aug. 3, 1969 .....	CF-ODL	CAMPBELL	Hollow River-Bobs Lake	1:00	Boy with back injuries
Aug. 4, 1969 .....	CF-ODL	CAMPBELL	Bigger Lake-North Bay	1:10	Man with back injuries
Aug. 17, 1969 .....	CF-OEA	HOWE	Port Arthur	2:20	Search for American boat reported missing
Aug. 14, 1969 .....	CF-OEV	CROAL	Big Crowe Lake-Pembroke	1:35	Man with collapsed lung
Sept. 28, 1969 .....	CF-OEO	TURCOTTE	Gogama-Sudbury	:45	Ill woman
Oct. 4, 1969 .....	CF-OEO	TURCOTTE	Cryderman Lake-South Porcupine	:45	Man who was shot in the head by high-power rifle
Oct. 12, 1969 .....	CF-OEY	BURTT	Pine Point-Port Arthur	2:05	Man who suffered heart attack
Nov. 3, 1969 .....	CF-OEI	CALVER	Little Lake-Parry Sound	:50	Man who suffered heart attack
Sept. 1-9, 1969 .....	Various aircraft		Northwestern and Central Ontario	80:45	Search for missing private aircraft
Feb. 22, 1970 .....	CF-OET	BEAUSHENE	Sheldon Lake-Sault Ste Marie	:45	Man with broken leg
Mar. 11, 1970 .....	CF-OEV	HOWE	Armstrong-Collins-Sioux Lookout	2:25	Woman struck by a train
Mar. 15, 1970 .....	CF-OET	THOMPSON	Collins-Armstrong Sault Ste Marie-North McKinnon Lake-Sault Ste Marie	:40	Man who suffered heart attack
Mar. 25, 1970 .....	CF-OET	PHILLIPS	Sault Ste Marie-Ramsay Lake-Sault Ste Marie	2:00	Man who suffered heart attack
Total .....				116 20	

## MERCY AND EMERGENCY FLIGHTS, 1969-70

Date	HELICOPTERS (Contract)	Pilot	Journey	Time	Reason
Oct. 19, 1969 .....	CF-YOQ	ZIMMER	Dog Lake-Thunder Bay	1:05	Man with shotgun wounds
Total .....				1:05	
				Time	
				HELICOPTERS (Non-Contract)	
Mercy Ambulance Service—Moosonee				44:15	
Total.....				44:15	

## ENGINEERING SERVICES SECTION

Engineering Services Section was created April 1, 1969, out of the Plant and Equipment Unit existing within the Protection Section, and supplemented by the transfer of staff from the former Water Control Branch, Department of Public Works.

The objectives of the Section are those implied by the name—to provide services to the operating branches and districts in those areas requiring professional engineering or engineering technology application.

### CAPITAL WORKS MAINTENANCE OF FACILITIES

Co-ordination and planning of the major capital works program of the Department was effected through liaison with the Department of Public Works, Treasury Board and affected branches, districts and regions. The projects included a new district office at Sioux Lookout; new Chief Ranger headquarters at Terrace Bay, Ignace, Bancroft, Cochrane and Kenora; renovations to the Chief Ranger headquarters at Pembroke; a fish research and experimental hatchery, fish production hatchery, tree nursery office and shipping shed at Dryden; and miscellaneous construction and building renovation.

*Setting up pump in nozzle crew competition.*





*The new dam on Malcolm Lake in Tweed Forest District.  
Photo by W. Lenson.*

Planning and budgeting for maintenance and minor construction of buildings and other facilities, under the minor capital works program, was carried out. District staff or tender procedures were utilized on projects other than essential services provided by the Department of Public Works. Projects ranging from painting buildings, repairing boats and tower cabins, to construction of gasoline storage buildings, junior ranger camps and staff quarters, were funded.

## MECHANICAL EQUIPMENT

Approximately 1,300 vehicles of all types are in use by the Department as well as tractors, loaders, graders, skidoos, etc. A planned equipment program and an established policy with respect to repair of all mechanical equipment, acquisition and replacement, equipment markings and colour, licensing, insurance coverage and bulk purchasing, have become a necessity and forms an integral part of the Section's responsibility. In addition, minimum standards for operating condition and general appearance of motor vehicles and trailers have been established to ensure safe, efficient and dependable operation.

A vehicle fleet management program has been implemented in three districts as a pilot study designed to provide management and operating personnel with computer print-outs of management information such as vehicle performance, frequency of repair, annual repair costs and accident and replacement information. The information is designed primarily to assist in framing an acquisition and replacement policy based on statistical information and should lead to reduced out-of-service time and operating failures. In addition, it will have the capability of assisting in minimizing operating and maintenance costs; it will provide a complete inventory and form an effective tool for establishing vehicle complement and distribution.

## SIGN PROGRAM

The Section co-ordinates the Department sign program in accordance with policy established by the Sign Committee. Sign type, quality, colour, symbols, production and erection specifications are being standardized to achieve public acceptance and assist the Department in communicating with the public while on or travelling through Crown lands or lands administered by the department.



## WATER MANAGEMENT ENGINEERING

Of increasing importance and concern are engineering projects related directly or indirectly to water use and management. Projects undertaken include pre-engineering, design, construction and maintenance of dams, docks and navigation locks and other hydraulic structures or facilities as well as improvement to flow channels and dredging.

### PRE-ENGINEERING SURVEYS AND DESIGN

Pre-engineering surveys permitted completion of designs for all dams and docks constructed, as well as a boat walkway in Kenora district, a fishway at Southampton, the Gananoque Wildlife Management Area, hydraulic parts of hatcheries at Pembroke, Hills Lake, a sheet pile retaining wall at the Fisheries Research Station, Wheatley, and a pressure-treated timber dock at Rondeau Provincial Park.

## CONSTRUCTION

Construction staff completed the construction of water control dams located at McGraw Falls, Remi Lake, Clayton Lake, Round Lake, Washagami Lake, Wakami Lake, Malcolm Lake, McCarrol Lake and at McNamara Lake. In addition, a dam on the Black Sturgeon River damaged by flood waters was partially re-constructed, and a dock for the use of our air services was constructed at Hayes Lake.

Construction was commenced on water control dams at Omemee, LeGrous Lake and White Lake. At Southampton, construction started on a lamprey control dam known as Denny's Dam which contains a lamprey-proof fish ladder. The cost of this project is being shared equally by Ontario and Canada.

## MAINTENANCE

Maintenance of hydraulic structures and docks were scheduled on the basis of condition determined from inspection and reports submitted from districts and included the following:

### DAMS

Noganosh Lake  
Baptiste Lake  
Baysville  
Opeongo Lake  
Whitney  
Dutchman  
Naiscoot River  
Gooseneck  
Midhurst Holding Pond  
Ranger Lake  
Duncan Lake  
Raven Lake  
Aylen Lake  
Paudash Lake  
Marie Louise Lake  
Huntsville  
Lyndhurst  
Mazanazhing Lake  
Dollars  
Knoepfli  
Wren Lake  
Lake Dore  
LeGrous Lake  
Harris Lake  
Lauzon Lake  
Windy  
Margaret Lake

### DOCKS

Air Service, Toronto  
Port Carling  
Rondeau Provincial Park

### LOCKS

Port Carling  
Magnetawan

## IMPROVEMENTS TO FLOW CHANNELS

Improvements to flow channels, by clearing debris, floating bogs, dredging, widening and deepening of flow channels, was carried out to increase efficiency in discharging water from Department-operated dams, to improve flow between controlled waters, or to decrease downstream flooding resulting from the Department's operation of a dam. This year, major projects were undertaken at Doe Lake, Bernard Creek, Boyne River and the channel connecting Crane and Little Clear Lakes, while debris and floating bogs were removed at other dams.

## INSPECTION

Of the 250 dams the Department owns and operates, ten per cent were inspected, either as a result of requests or expressions of concern for the safety and protection of downstream interests, or as a matter of routine. Reports were prepared and recommendations made to either repair or proceed to construction at some future date in each instance.

## ENGINEERING CONSULTATIONS

The section provides engineering consultation for design, construction or reconstruction of Departmental facilities. Engineering studies and reports are provided by staff, or by utilizing the services of consultants specializing in given areas. Specialists in ground water supply, soil analysis and aerial surveying were retained for specific projects.

Feasibility studies were undertaken, and reports and cost estimates were prepared on matters related to equipment, water supply, and outdoor facilities for fish culture stations.

Engineering consultation and construction forces were provided for Parks Branch for the construction of eight comfort stations, one each at White Lake and Neys Provincial Parks, and six at Algonquin Provincial Park.

# LANDS AND SURVEYS BRANCH



*Moon River, Parry Sound Forest District.  
Photo by V. Mann.*

Lands and Surveys Branch is divided into three sections with duties and responsibilities as follows.

## LANDS

Administration of public lands and their disposition by sale, patent, vesting order, quit claim deed, lease, licence of occupation, or land use permit; release of reservations in patents, assignments and cancellations; and reservation of lands for public and government uses.

## LAND ACQUISITION AND PLANNING

Recommendations and applications for purchase of private lands for public uses; development and co-ordination of land use plans in all districts for the management of renewable, natural resources; Recreational Land Inventory Sector of Canada Land Inventory; co-ordination of departmental A.R.D.A. projects; and liaison with Department of Agriculture and Food in private lands and with other Departments on the socio-economic implications of land use objectives.

*Water Resources Management* and approval of dams; licences of occupation for dams; flooding and diversions; issuance and servicing of Water Power Lease Agreements; engineering consultations; feasibility studies, inspections, reports, and access roads.

## SURVEYS

Examination, recording and custody of original plans and field notes of restoration of original Crown survey points, retracement and municipal surveys, and surveys of Crown lands for disposition; map compilation; authorization of geographical names; and distribution of maps, publications and copies of survey records.



# LANDS SECTION

The primary function of the Section is to provide the means whereby individuals, corporations, provincial government commissions and agencies, and the Government of Canada may obtain the public lands they require for various purposes. The usual requirements are for living space for full time or occasional occupancy and for commercial or industrial uses. Public land may be transferred to private ownership for any purpose except the propagation of the renewable, natural resources administered by the Department. This excludes uses such as tree farming, fish farming and game farming, and disposal of large areas for private recreational use.

To carry out this operation, the Section must study land values, answer enquiries, and plan for the orderly and efficient disposal of lands as nearly as possible in tune with the requirements of the population and the economy. Plans for disposal must also ensure that adequate areas of land are reserved for the use of the public and for government purposes.

Public lands are transferred to private control by sale or rental. The use to be made of the land is always a prime consideration. Except for rental under Land Use Permit, the applicant is required to spend, in most cases, two to ten times the established land value on improvements within a limited time before title passes to him. In some situations, such as where sale is by public auction, the reverse is true. Thus, the actual price of the land is normally considered as secondary to the economic advantages accruing from the new development.

LAND TRANSACTIONS in years ending March 31

	Land Use Permits	Other Transactions	Total
1970 .....	4,494	3,334	7,828
1969 .....	4,930	3,140	8,070
1968 .....	4,747	2,693	7,440
1967 .....	4,555	2,756	7,311
1966 .....	4,382	2,481	6,863

It is noted that there was a decrease in the numbers of Land Use Permits issued during the past year. The increase in land transactions, other than Land Use Permits, was due to the increase in the sale of cottage lots. Considerable public concern has been expressed regarding the sale of cottage lots to residents of other countries. In this connection, a careful review has been made of the patents issued

for cottage properties during the past six years ending March 31, 1970. This review shows that 5,830 patents were issued; 79 per cent of these lots were patents to residents of Ontario, five per cent to residents of other provinces, and 16 per cent to residents of other countries.

During the year, a new policy was approved with respect to the disposal to municipalities of the lands which they require for municipal purposes. Such lands are now transferred to municipal control for a fee of \$100 regardless of area or land values.

The program for the development and operation of garbage disposal sites, serving the unorganized areas of the province, was continued and expanded. At the year's end, 254 disposal sites were being maintained. In co-operation with the local health units, a number of unsatisfactory sites have been closed. Strategically located and well maintained garbage dumps help to alleviate littering on public lands.

Three new restricted areas were set up to control and regulate improvements on land. One of these in the Shebandowan area, west of Thunder Bay, was set up to control residential development in connection with a new mine in the area. The other two areas are adjacent to Timmins and Cochrane. They were set up to control to better advantage the fringe development in unorganized townships adjacent to these communities. There are now 15 restricted areas in the province having a combined area of more than 3,000 square miles.

## LAND ACQUISITION AND PLANNING SECTION

This Section was formed in 1963 to implement the program announced in the Speech from the Throne in the Fall Session of 1962. This program anticipated the expenditure of \$200 million over a twenty-year period for the purchase of land for recreation, wildlife management, parks, reforestation and other resource management uses.

Since the inception of the program, 435,647 acres had been acquired by March 31, 1970. During the 1969-70 fiscal year, Treasury Board approved 27 projects involving the purchase of 40,802 acres of land. The Ontario Parks Integration Board approved 24 projects involving the purchase of 3,826 acres of land. A total of seven leases were acquired in Algonquin and Rondeau Provincial Parks, in keeping with

the policy to revert these areas to a wilderness state and to permit public rather than private use of certain areas.

Included in the land acquisition program are nine projects that are approved under the A.R.D.A. Federal/Provincial Rural Development Agreement.

## LAND INVENTORY

The Land Inventory Unit continued to carry out an inventory of the lands for the Province for both national and provincial requirements. The national phase is the joint Federal/Provincial Canada Land Inventory Program which covers the agricultural and marginal agricultural areas of the province.

These lands are described in terms of physiographic and biological features and evaluated for their capability to provide recreational experience, forest and wildlife crops. Field work for recreation and forestry evaluations were completed on Agreement area during this fiscal year. Approximately 10 per cent of the Agreement area remains to be covered for the wildlife evaluation.

The cartographic production has been maintained at a high level, and the following represents a summary of the number of maps compiled and drafted.

(a) <i>Canada Land Inventory</i>		
Sector	Map Scale	
	1:250,000	1:50,000
Recreation .....	8	226
Wildlife .....	9	190
Forestry .....	11	—
(b) <i>Ontario Land Inventory</i>		
Sector	Map Scale	
	1:250,000	1:50,000
Land Classification .....	10	—
Wildlife .....	—	188
Recreation .....	1	—
Forestry .....	10	—

## ACCESS ROADS

As provided for under the provisions of Part 1A of The Public Lands Act, thirty-two roads in northern Ontario, comprising 441 miles, have been designated as public forest roads. In addition, three private forest roads of industry, comprising 87 miles, are now under agreement with the Department for the shared cost of maintenance. This provides for the public's use of these roads. This program will be expanded in the next fiscal year as the need develops.

## WATER MANAGEMENT

This Unit provides management of water resource through approval of dams under The Lakes and Rivers Improvement

Act; determination of the terms and conditions, and preparation of water power lease agreements under The Water Power Regulation Act; administration of licences of occupation for dams constructed principally for log driving purposes; and administration of the reconstruction of old dams. In addition, special engineering consultation services are provided in fisheries and waterfowl management projects.

# SURVEYS SECTION

## ADMINISTRATIVE SERVICES

The main responsibilities discharged by the Sub-section are the custody of survey records and the distribution of reproductions for sale to the public and the official use of all government departments, as well as maps and publications produced by the Department, and maps of the National Topographic Series as produced by the federal Department of Energy, Mines and Resources, Ottawa.

An increase of over one-third of the quantity of the Provincial Topographic Series map sheets distributed over that of the previous year was due to the production of seven new sheets as well as seven revised editions. The distribution of the Provincial Territorial Series and miscellaneous maps also increased, due to four maps being produced.

Increased distribution of the National Topographic Series maps, by approximately twenty per cent, is also to be noted due to additional new and revised sheets being produced, as well as a number of the 1:50,000 scaled sheets in east and west halves being combined into a single sheet.

Numerous enquiries for historical and genealogical information continued to be received, and there was a greater number of plans and field notes of Crown subdivisions and retracement surveys, mounted or bound, catalogued and filed in the Surveys Records Library.

The demand for reproductions of plans and field notes also continued to increase over the past year.

## CARTOGRAPHIC MAPPING

Lands alienated from the Crown were indicated for the first time on maps of the Provincial Series one-inch-to-two-mile maps. This additional information was introduced to meet the needs of a number of disciplines within and without the Department. A total of eleven maps were produced.

Two maps of the one-inch-to-eight-mile series were revised and improved upon depletion of existing stocks; these were Map 23 "Thunder Bay" and Map 22 "Algoma, Sudbury and Timiskaming".



In addition to regular annual production of Fishing and Hunting Regulation map folders, the Ontario Map Catalogue, listing all maps produced by departments and commissions of the Ontario Government, was compiled, printed and distributed to universities, libraries and federal and provincial government agencies.

One-inch-to-two-mile map series produced: Blind River, Heron Bay, Schreiber, Pukaskwa River, Black Bay, Lac des Mille Lacs, Northern Light Lake, Marmion Lake, Obakamiga Lake, Gogama (3rd edition), and Chapleau (2nd edition).

One-inch-to-eight-mile series produced: Map 22 "Algoma, Sudbury and Timiskaming", and Map 23 "Thunder Bay".

Special mapping produced: Map 3169 "Kenora-Dryden", scale 1:250,000 (at request of District Forester, Kenora); Trent-Severn Waterway (at request of Land Acquisition and Planning Section for newspaper reproduction); French River Watershed (at request of Land Acquisition and Planning Section for report); Map 3869 North Georgian Bay Recreational Reserve (at request of Land Acquisition and Planning Section for report); and Fishing and Hunting Regulation map folders.

## THE ONTARIO GEOGRAPHIC NAMES BOARD

The Board is composed of the Surveyor General, a secretary and five other members who have not as yet been appointed. Nomenclature decisions are approved by the Minister of Lands and Forests.

During the 1969-70 fiscal year, a total of 83 maps and charts were edited for nomenclature accuracy which can be broken down by map scales to:

Provincial Topographic Series, 1" = 2 miles. . . .	6
National Topographic Series, 1:250,000. . . . .	4
National Topographic Series, 1:50,000. . . . .	67
National Topographic Series, 1:25,000. . . . .	1
Canadian Hydrographic Services Charts. . . . .	5

Five thousand, eight hundred and ninety-six names were examined for the federal mapping agencies through the Canadian Permanent Committee on Geographical Names with 1,435 names being approved, 58 names rescinded, and 32 name applications altered. A total of 917 new cards were added to the geographic names card index.

Also edited were 21 Fishstocking Lists, issued by the Departmental district offices, which resulted in an addition of 263 new names hitherto unrecorded to the files.

Also examined were 37 district-produced maps, the majority being at the scale of 1" = 2 miles, which effected in the recording on O.F.R.I. base maps a total of 928 previously unrecorded names.

The updating of the card index was continued by recording the correct latitude and longitude on the name cards.

Over 256 inquiries, from the public as well as within the government, concerning geographic nomenclature were answered throughout the year.

## DRAFTING SERVICES

The production of township plans by commercial drafting contracts was continued, and twenty Crown Land status plans for land planning and sales and general public purposes were completed to supplement the continuing Departmental production. Head Office branches and District field office activities resulted in the increased preparation of special maps, plans, miscellaneous charts and graphic illustrations.

New dispositions of Crown Land continued to be plotted and designated on the office plans, as to location and extent, to maintain an up-to-date graphic inventory of the provincial land status.

General drafting activities were considerably increased over the past fiscal year, due mainly to the compilation of Crown and alienated lands required to be shown on the Provincial Topographic map series, scale 1" to 2 miles.

## LEGAL SURVEYS EXAMINATION

Crown instructions for surveys carried out by Departmental surveyors, as well as for all surveys carried out by private surveyors under contract for retracement, restoration, subdivision and inspection programs, are prepared by this Sub-section as well as drafting and plan examination.

Compiled plans, and plans of surveys for alienation of Crown land, were examined for compliance with Departmental policy and statutes. Included are plans of individual cottage lots, commercial or industrial locations, water lots and Crown subdivisions. Returns of surveys carried out under instructions, such as retracement, restoration and municipal surveys, which did not lead to alienation, were examined for compliance with statutes and instructions.

Field surveyors, located at Tweed and Parry Sound district headquarters, were engaged in surveys for administrative purposes which includes the determination of encroachment on Crown Land and the extent of ambiguous Crown grants, retracement, and other miscellaneous surveys.



# PERSONNEL BRANCH



*Staff duties include meeting the public in a great variety of situations. The view, above, at Orono Forest Station, August 22, 1969, was taken at the first of the popular Forestry Field Days held for agreement holders (and their families) under The Woodlands Improvement Act. Photo by T. Jenkins.*

Personnel Branch is divided into five sections with duties and responsibilities as follows.

- *Employment:* Recruitment of staff, including Junior Forest Rangers; recruiting activities at universities and technical schools; job advertising; transfers and promotions; establishment and complement control; and assignment of qualified employees to positions.
- *Classification and Job Evaluation:* Ensuring that positions are properly classified and recommending the classification of positions; identifying and recording of organization and positions; ensuring that position specifications are produced; classifying positions under the Delegated Authority; and developing class series.
- *Training and Special Assignments:* Co-ordinating and organizing Department training courses; arranging for employees to attend courses given by outside agencies; liaison with Ontario Forest Technical School and Educational Leave Committee; analyzing Department training needs; evaluating courses; and special assignments.
- *Employee Relations:* Counselling of employees; improvement of communications between field and head office staffs; investigations of problems relating to personnel; liaison with Staff Relations Branch, Treasury Board and Civil Service Association of Ontario; and maintaining Department program on alcoholism.
- *Office Management:* Documentation of personnel records; attendance reports and leaves of absence recommendations; processing nominations to staff; transfers; separations; group insurance applications and changes; merit increases; accelerated increases; salary revisions; maintaining personnel files for all Regular and Probationary staff and Group 3 Unclassified; and providing statistical information at the request of other Branches of the Department.

## RECRUITMENT

To provide the field and Head Office organizations with qualified professional and technical staff, seven Universities and four Forestry Technician Schools were visited in Canada.

Newspaper advertising was used to cover specialized positions not normally handled by the campus program.

The Junior Forest Ranger program continued to be attractive to 17-year-olds. A total of 1,733 boys was placed in 75 camps in the northern part of the Province.

## CLASSIFICATION

A continually increasing number of class specifications are required to be used directly and indirectly in the classification of positions in the Department. In addition to such existing programs as the review of all positions on a three-year rotation basis, and continuous audit to ensure validity and consistency of application, an added responsibility for delegated classification has been assumed under a recent agreement with the Department of Civil Service signed by the Deputy Minister.

The study and development of a proposed new Resource Technician and Resource Technician Senior Series has been completed which will integrate the existing Forestry Technician, Conservation Officer and Ranger series, and if approved, will be implemented.

## TRAINING

1969-70 saw the introduction of Supervisory Training Courses and a resultant opportunity for greater participation by field staff. This was done through assistance provided by the Department of Education.

A changing role of the Department of Civil Service, towards the research and development of instrumented training programs, placed emphasis on the need for appropriate development of all staff throughout the Province and not simply in Toronto alone.

Five employees attended the Resource Management Diploma Course at the University of Toronto. Certificate courses in Timber, Fire Suppression, etc., were continued as usual.

To promote sound learning through the good teaching techniques of others, Instructor-Training courses were continued, supplying a broad base of skills which can be usefully tapped as deemed necessary and appropriate throughout the Province.

## NEW EMPLOYEES HIRED, 1969-70

	Male	Female	Total
Head Office .....	90	44	134
Field .....	146	30	176
Total .....	236	74	310

## TOTAL STAFF, MARCH 31, 1970

	Regular	Probationary	Unclassified Staff	Total
Head Office .....	725	134	189	1048
Field .....	2037	176	688	2901
Total .....	2762	310	877	3949
Total, March 31, 1969	2486	485	904	3,875
Total, March 31, 1968	2,304	490	966	3,760
Total, March 31, 1967	2,270	297	777	3,344

Total complement of regular and probationary positions as at March 31, 1970 .....	3,334
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Total regular and probationary staff as at March 31, 1970 .....	3,072
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Total vacancies in complement as at March 31, 1970	262
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## PROFESSIONAL EMPLOYEES, MARCH 31, 1970

Foresters .....	210
Biologists .....	85
Professional Engineers .....	75
Miscellaneous .....	96
Total .....	406

Number of Ontario Forest Technical School Graduates on Staff .....	1,088
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Number of Licensed Scalers on Staff .....	942
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*Sportsmen in Ancaster Township meet with conservation officer to hear details of Wildlife Extension Program and to post safety zones around the residences and farm buildings of co-operating landowners. Photo by C. Van Gernerden.*

## EMPLOYEE RELATIONS

A new agreement was reached on hours of work for pilots and air engineers during the operating season. Effective communication was maintained with the Staff Relations Branch, Treasury Board and the Civil Service Association of Ontario.

A review of existing personnel circulars was started, and some revised circulars were issued. It is intended that the circulars will become a manual for personnel administration.

The objective of clear dialogue internally at Head Office, and between the field and Head Office, was pursued, and conditions were improved.

The program of assisting the problem employee was maintained and included such items as financial and emotional as well as alcoholic; at meetings, emphasis has been placed upon the role of supervisor. The results of this program cannot be assessed on a short-term basis but there are indications which support the continuation of such an endeavour.

## DISPOSITION OF PERSONNEL

The disposition of senior administrative staff as of March 31, 1970, was as follows:

*Deputy Minister:* G. H. U. Bayly.

*Assistant Deputy Minister:* R. D. K. Acheson.

*Regional Directors:* J. W. Lockwood (North-Eastern); L. Ringham (North-Western); J. W. Giles (Southern).

*Branch Chiefs:* R. R. MacBean (Accounts); Dr. C. H. D. Clarke (Fish and Wildlife); W. T. Foster (Forest Protection); R. G. Code (Lands and Surveys); G. H. Ferguson (Law); G. A. Hamilton (Operations); P. Addison (Parks); J. M. Taylor (Personnel); Dr. W. R. Henson (Research); A. J. Herridge (Timber).

*District Foresters:* G. P. Elliott (Chapleau); R. J. Bugar (Cochrane); R. A. Balkwill (Fort Frances); D. E. Gage (Geraldton); D. A. Fawcett (Kapuskasing); R. M. Christie (Kemptonville); K. K. Irizawa (Kenora); W. B. M. Clarke (Lake Erie); J. M. Halpenny (Lake Huron); F. E. Sider (Lake Simcoe); A. E. Walroth (Lindsay); W. L. Sleeman (North Bay); J. S. Ball (Parry Sound); T. W. Hueston (Pembroke); W. D. Tieman (Sault Ste. Marie); F. L. Hall (Sioux Lookout); G. A. McCormack (Sudbury); S. R. Hamilton (Swastika); A. H. Peacock (Tweed); J. R. Oatway (White River, R. A. Baxter (Thunder Bay).

*Ontario Forest Technical School:* R. W. Hummel (Director).

## STAFF TURNOVER OF REGULAR AND PROBATIONARY EMPLOYEES, 1969-70

	Resigned	Dismissed	Retired	Died	Super-annuated	Transfers Inter- Departmental	Misc	Total
Head Office .....	77	3	1	3	17	1	9	111
Field .....	108	7	8	9	41	2	17	192
Total .....	185	10	9	12	58	3	26	303

Note: The staff turnover for the fiscal year was 8.37%. This is the ratio of separations to total regular and probationary staff.



# ACCOUNTS BRANCH



*At Department exhibits and at meetings addressed by Department personnel, large numbers were helped to an improved understanding of the natural environment. Above: lunch break along the Lady Evelyn River, a popular canoe route in North Bay Forest District. Photo by F. Tremblay.*

Accounts Branch is divided into units with duties and responsibilities as follows.

- *Accounting:* Supervision of accounting for entire Department; preparation of claims under Federal-Provincial agreements; compilation of costing reports; procedural control and safe keeping of assets; and financial liaison with Treasury Board, Provincial Auditor, and other Government Departments and agencies.
- *Revenue:* Collection of revenue; maintenance of accounts receivable; supervision of accountable warrant funds; control of collateral securities; and issue of angling and hunting licences and park permits.
- *Expenditure:* Preparation of payrolls; internal check and payment of accounts payable; processing of refunds; and preparation of data for Public Accounts.
- *Budget Preparation and Control:* Compilation of estimates and forecasts; and expenditure reporting and control.
- *Finance and Cost Analyses:* Financial evaluation of plans; and preparation of statistical and financial reports.
- *Accounting Systems and Procedures:* Development of accounting systems; preparation of accounting procedural manuals; and development of costing systems.
- *Land Tax Administration:* Administration of Provincial Land Tax Act; and assessments and appeals.
- *Internal Audit:* Review and appraisal of accounting, financial and operational controls.
- *Systems and Procedures:* Provision of systems improvement program for entire Department.
- *General:* Data processing; and addressograph and mail services.

# FINANCIAL REPORT

For year ended March 31st, 1970

## COMPARISON OF RECEIPTS AND DISBURSEMENTS WITH THOSE OF THE PREVIOUS TWO YEARS

### (a) RECEIPTS (Branch)

	1968 \$	1969 \$	1970 \$
Provincial Land Tax	1,761,796	1,754,617	2,033,837
Forest Protection ..	163,205	128,821	155,495
Timber .....	17,057,603	18,657,238	20,554,132
Lands and Surveys..	1,519,099	1,952,266	2,389,615
Fish and Wildlife ..	6,891,016	8,691,389	11,146,218
Parks .....	2,432,009	2,413,613	3,082,227
Other.....	155,616	181,460	157,161
Total Receipts	29,980,344	33,779,404	39,518,685

### (b) DISBURSEMENTS

	1968 \$	1969 \$	1970 \$
General Expenditure	50,813,866	58,719,539	61,452,670

## STATEMENT OF RECEIPTS

For Year Ended

## RECEIPTS

MAIN OFFICE			
Provincial Land Tax .....		\$ 2,033,837.79	
Sale of Maps, Publications, etc. ....		<u>157,161.27</u>	\$ 2,190,999.06
FOREST PROTECTION BRANCH			
Forest Protection Section			
Recovery of Fire Fighting Costs and Miscellaneous .....		\$ 87,512.06	
Air Service Section—Flying Fees .....		<u>67,983.27</u>	155,495.33
TIMBER BRANCH			
Timber Section			
Stumpage Charges .....	\$17,501,304.32		
Management and Fire Protection Charges .....	2,383,097.97		
Agreement Forests .....	74,716.95		
Logging Roads—Recovery of Construction Costs (Fixed Assets) .....	250,886.68		
Miscellaneous .....	<u>12,383.69</u>	\$20,222,389.61	
Reforestation Section			
Sale of Nursery Stock .....		189,535.29	
Government of Canada—Agriculture Rehabilitation and Development Project Costs (Prior Years Expenditure) .....		<u>142,207.04</u>	20,554,131.94
LANDS AND SURVEYS BRANCH			
Lands Section			
Land Sales (Fixed Assets) .....	\$ 1,279,054.11		
Summer Resort Roads			
(Recovery of Construction Costs) (Fixed Assets) .....	77,160.76		
Land Rentals, Leases and Licenses of Occupation .....	447,174.29		
Perquisites—Rentals .....	179,545.78		
Miscellaneous .....	<u>29,391.12</u>	\$ 2,012,326.06	
Park Rentals, Leases and Licenses of Occupation			
Algonquin .....	\$ 12,051.31		
Rondeau .....	21,194.35		
Presqu'île .....	2,025.00		
Long Point .....	595.00		
Sundry Parks .....	<u>1,050.00</u>	36,915.66	
Surveys Section			
Recovery of Survey Fees .....		291,100.00	
Government of Canada—Agriculture Rehabilitation and Development Project Costs (Prior Year's Expenditure) .....		<u>49,272.87</u>	2,389,614.59
FISH AND WILDLIFE BRANCH			
Licenses, Royalties and Sundry .....			<u>11,146,217.93</u>
Carried Forward			\$36,436,458.85



# AND DISBURSEMENTS

March 31st 1970

Statement No. 1

## DISBURSEMENTS

### DEPARTMENTAL ADMINISTRATION

Minister's Salary—Statutory .....	\$	15,000.00	
Salaries .....	\$	2,143,726.58	
Travelling Expenses .....		75,022.01	
Maintenance and Operating .....		<u>1,196,268.03</u>	3,415,016.62
Damages and Claims .....		4,552.12	
Advisory Committee to Minister .....		1,662.74	
Grant to Canadian Council of Resource Ministers .....		34,776.00	
Unemployment Insurance .....		132,859.85	
Charges for Data Processing Services .....		142,456.13	
Workmen's Compensation Board .....		213,296.23	
Grant to Ontario Forestry Association .....		12,500.00	
Training and Development .....		<u>1,434,412.85</u>	\$ 5,406,532.54

### RESOURCE PROTECTION AND DEVELOPMENT PROGRAM

Program Administration			
Salaries .....	\$	2,429,173.07	
Travelling Expenses .....		137,435.00	
Maintenance and Operating .....		<u>543,361.00</u>	3,109,969.07
Forest Protection Activity			
Salaries .....	\$	7,181,076.69	
Travelling Expenses .....		110,988.90	
Maintenance and Operating .....		<u>3,468,328.00</u>	\$10,760,393.59
Extra Fire Fighting			
Wages, etc., Maintenance and Operating .....	\$	422,498.69	
Forest Fire Suppression Equipment .....		<u>191,566.41</u>	<u>614,065.10</u>
			11,374,458.69
Timber Activity			
Salaries .....	\$	9,255,732.38	
Travelling Expenses .....		341,915.89	
Maintenance and Operating .....		<u>3,916,926.10</u>	\$13,514,574.37
Grants to Municipalities and Conservation Authorities .....		117,264.86	
Construction of Logging Roads (See Receipts) .....		<u>250,886.68</u>	
		\$13,882,725.91	
Less—Reimbursements of expenditures—			
Government of Canada—Agriculture Rehabilitation and Development Project Costs		<u>338,047.30</u>	<u>13,544,678.91</u>

Carried Forward

\$33,435,638.91

# RECEIPTS *(Continued)*

		Brought Forward	\$36,436,458.85
PARKS BRANCH			
Park Concessions—Rentals .....		\$ 131,033.16	
Permits (All Parks)			
Vehicle.....	\$ 609,390.00		
Campsite.....	<u>1,937,078.10</u>	2,546,468.10	
Licenses—Guide .....		5,575.00	
Ski-Tow Fees .....		3,058.00	
Miscellaneous .....		34,715.27	
Government of Canada—Agriculture Rehabilitation and Development Project Costs (Prior Year's Expenditure) (Fixed Assets).....		<u>361,377.53</u>	3,082,227.06
REIMBURSEMENTS OF EXPENDITURES			
Government of Canada			
Agriculture Rehabilitation and Development Project Costs .....	\$ 1,107,950.04		
Resources Development Project Costs .....	100,000.00		
Fisheries Industrial Development Project Costs .....	31,750.00		
Dam Construction Project Costs .....	<u>85,000.00</u>		<u>1,324,700.04</u>
GROSS RECEIPTS .....			\$40,843,385.95
Deduct—Reimbursements of Expenditures (See Contra) .....			<u>1,324,700.04</u>
NET RECEIPTS.....			\$39,518,685.91
Excess of Disbursements Over Receipts .....			<u>21,933,984.69</u>

\$61,452,670.60

# DISBURSEMENTS *(Continued)*

		Brought Forward	\$33,435,638.91
<b>Lands Activity</b>			
Salaries .....	\$ 2,614,395.08		
Travelling Expenses .....	135,141.72		
Maintenance and Operating .....	<u>448,858.51</u>	\$ 3,198,395.31	
Grant-Association of Ontario Land Surveyors .....		200.00	
Land Surveys .....		860,121.80	
Maintenance of Locks, Bridges, Dams and Docks .....		92,873.76	
Dredging .....		9,743.14	
Storage Dams—control and maintenance .....		2,095.08	
Maintenance Forest Access Roads .....		1,053,889.29	
Annuities and Bonuses to Indians .....		41,468.00	
Construction Forest Access Roads .....		1,123,137.05	
Construction of Summer Resort Access Roads (See Receipts) .....		209,357.51	
Construction of Dams, Docks, Locks and Improvement to Flow Channels .....		<u>1,030,807.12</u>	
		\$ 7,622,088.06	
Less—Reimbursements of Expenditures—Government of Canada \$			
Agriculture Rehabilitation and Development Project Costs .....	501,848.14		
Dam Construction Project Costs .....	<u>85,000.00</u>	586,848.14	7,035,239.92
<b>Research Activity</b>			
Salaries .....		\$ 1,296,429.53	
Travelling Expenses .....		62,401.00	
Maintenance and Operating .....		<u>383,297.97</u>	1,742,128.50
<b>RECREATION PROGRAM</b>			
<b>Program Administration</b>			
Salaries .....		\$ 1,200,123.76	
Travelling Expenses .....		67,671.38	
Maintenance and Operating .....		<u>394,696.86</u>	1,662,492.00
<b>Fish and Wildlife Activity</b>			
Salaries .....			
Travelling Expenses .....	247,614.35		
Maintenance and Operating .....	<u>1,491,932.28</u>	\$ 6,104,021.47	
Grants—			
Jack Miner Migratory Bird Foundation Inc. ....	\$ 3,000.00		
Ontario Waterfowl Research Foundation .....	5,000.00		
Ontario Fur Breeders' Association Inc. ....	5,000.00		
Ontario Council of Commercial Fishermen .....	<u>5,000.00</u>	18,000.00	
Payments of Wolf Bounty .....		<u>69,996.00</u>	
		\$ 6,192,017.47	
Less—Reimbursements of Expenditures—Government of Canada			
Resources Development Project Costs .....	\$ 100,000.00		
Fisheries Industrial Development Project Costs .....	<u>31,750.00</u>	131,750.00	6,060,267.47
<b>Parks Activity</b>			
Salaries .....	\$ 3,886,379.48		
Travelling Expenses .....	103,946.73		
Maintenance and Operating .....	<u>1,261,753.92</u>	\$ 5,252,080.13	
Acquisition and Development of Land .....		6,532,878.27	
		\$11,784,958.40	
Less—Reimbursements of Expenditures—Government of Canada			
Agriculture Rehabilitation and Development Project Costs .....		268,054.60	11,516,903.80
Total Net Expenditure .....			<u>\$61,452,670.60</u>



# TOTAL EXPENDITURE ALLOCATED

*For Year Ended*

Programs	Vote Total \$	Activity Total \$	Sub- Activity Total \$
DEPARTMENTAL ADMINISTRATION .....	5,406,532.54		
(Pro-Rated by Operating Activities) .....			
Main Office .....		341,516.61	341,516.61
Accounts .....		1,475,379.07	1,475,379.07
Legal Services .....		137,796.28	137,796.28
Administrative Services .....		1,294,284.49	1,294,284.49
Personnel .....		588,411.62	588,411.62
Information and Education .....		403,440.58	403,440.58
Junior Rangers .....		1,165,703.89	1,165,703.89
	5,406,532.54	5,406,532.54	5,406,532.54
RESOURCES PROTECTION AND DEVELOPMENT .....	37,731,370.23		
Program Administration (Pro-Rated by Activities) .....		3,109,969.07	3,109,969.07
Forest Protection .....		11,374,458.69	
Protection Services .....			6,146,619.36
Communication Services .....			457,170.66
Plant Maintenance .....			840,015.54
Stock Control and Repair .....			673,672.31
Air Service .....			2,642,915.72
Extra Fire Fighting .....			614,065.10
Timber .....		13,882,725.91	
Timber Service .....			13,514,574.37
Grants—Municipalities and Conservation Authorities .....			117,264.86
Construction of Logging Roads .....			250,886.68
Lands .....		7,622,088.06	
Lands Service .....			2,661,684.71
Land Surveys .....			860,121.80
Maintenance of Locks .....			92,873.76
Dredging .....			9,743.14
Storage Dams—Control and Maintenance .....			2,095.08
Maintenance—Forest Access Roads .....			1,053,889.29
Annuities and Bonuses to Indians .....			41,468.00
Construction Forest Access Roads .....			1,123,137.05
Construction Summer Resort Roads .....			209,357.51
Construction of Dams, Docks, Locks, and Improvement to Flow Channels .....			1,030,807.12
Canada Land Inventory .....			536,910.60
Research .....		1,742,128.50	1,742,128.50
	37,731,370.23	37,731,370.23	37,731,370.23

# MAIN ACTIVITIES

March 31st, 1970

Statement 2

Forest Protection \$	Timber \$	Lands \$	Fish & Wildlife \$	Parks \$	Less Reimbursements of Expenditures (Federal Contributions) \$
53,310.74	115,364.31	37,327.77	62,156.02	73,357.77	
230,306.67	498,383.05	161,258.93	268,518.99	316,911.43	
21,510.00	46,547.58	15,061.13	25,078.93	29,598.64	
202,037.81	437,209.30	141,465.29	235,559.78	278,012.31	
91,851.05	198,765.45	64,313.39	107,090.92	126,390.81	
62,977.07	136,282.23	44,096.06	73,426.19	86,659.03	
189,207.07	387,864.46	32,221.21	22,072.62	534,338.53	
851,200.41	1,820,416.38	495,743.78	793,903.45	1,445,268.52	-
725,600.98	1,568,173.44	548,210.49	219,283.96	48,700.20	
6,146,619.36					
77,856.16	156,946.69	43,065.48	87,548.18	91,754.15	
143,054.64	288,377.33	79,129.46	160,862.98	168,591.13	
114,726.39	231,271.71	63,459.93	129,008.25	135,206.03	
784,286.12	393,094.94	186,909.06	1,094,850.21	183,775.39	
614,065.10					
	13,514,574.37				317,779.93
	117,264.86				20,267.37
	250,886.68				
		2,661,684.71			
		860,121.80			
		83,586.39	9,287.37		
		8,768.83	974.31		
		2,095.08			
281,646.92	452,653.24	206,382.10	81,998.31	31,208.72	
		41,468.00			
49,512.98	806,904.26	238,190.66	21,939.81	6,589.34	
		209,357.51			
		853,083.75	177,723.37		85,000.00
	222,499.56	215,875.43	98,535.61		501,848.14
7,621.49	723,084.66		993,834.29	17,588.06	
8,944,990.14	18,725,731.74	6,301,388.68	3,075,846.65	683,413.02	924,895.44

# TOTAL EXPENDITURE ALLOCATED

For Year Ended

Programs	Vote Total \$	Activity Total \$	Sub- Activity Total \$
RECREATION .....	19,639,467.87		
Program Administration (Pro-Rated by Activities) .....		1,662,492.00	1,662,492.00
Fish and Wildlife .....		6,192,017.47	
Fish and Wildlife Services .....			6,104,021.47
Grants .....			18,000.00
Payments of Wolf Bounty .....			69,996.00
Parks .....		11,784,958.40	
Parks Service .....			5,252,080.13
Acquisition and Development of Land .....			6,532,878.27
	19,639,467.87	19,639,467.87	19,639,467.87

TOTAL GROSS EXPENDITURE .....	62,777,370.64	62,777,370.64	62,777,370.64
Less—Reimbursements of Expenditures .....	1,324,700.04	1,324,700.04	1,324,700.04
TOTAL NET EXPENDITURE .....	61,452,670.60	61,452,670.60	61,452,670.60

Percentage of Total .....



# TO MAIN ACTIVITIES (continued)

March 31st, 1970 (continued)

Forest Protection \$	Timber \$	Lands \$	Fish & Wildlife \$	Parks \$	Less Reimbursements of Expenditures (Federal Contributions) \$
	41,232.99	3,967.02	752,263.09	865,028.90	
			6,104,021.47		131,750.00
			18,000.00		
			69,996.00		
	616,932.13	59,068.14	617,303.75	5,252,080.13	
				5,239,574.25	268,054.60
—	658,165.12	63,035.16	7,561,584.31	11,356,683.28	399,804.60
9,796,190.55	21,204,313.24	6,860,167.62	11,431,334.41	13,485,364.82	
	690,209.49	300,741.23	249,828.83	83,920.49	1,324,700.04
9,796,190.55	20,514,103.75	6,559,426.39	11,181,505.58	13,401,444.33	
15.94%	33.38%	10.67%	18.20%	21.81%	

## LAW BRANCH



*In 1969-70, the first full year in which the new resident angling licence was in effect, 603,670 licences were sold. Above: angler with yellow pickerel (walleye) from Lake Simcoe in the Talbot River area. Photo by W. J. Straight.*

The duties and responsibilities of Law Branch may be summarized as follows.

- *Policy:* Establishing and reviewing Department policy with respect to legislation, regulations or administration; and integrating Department policies into those of the Government.
- *Interpretation* of statutes and regulations.
- *Advice* to branches and field offices on the legal position of the Department in all matters affecting it.
- *Preparation and Processing* of agreements; briefs, opinions and memoranda on special subjects; leases; legislation; licences; office consolidations of statutes and regulations; pleadings; recommendations to Council; and regulations under the various statutes administered by the Department.
- *Services (miscellaneous):* Collection of bad accounts; conducting litigation; conveyancing; representing the Department as Counsel in Provincial Land Tax Appeals and other hearings; settlements of claims and disputes; and title searching.
- *Liaison* with federal officials on matters concerning fisheries; federal canal systems, harbours and lands; and Indian reserves and rights of Indians, particularly regarding hunting and fishing.
- *Patents Office:* Maintenance of records of Crown land and transactions respecting, and legal dispositions of Crown lands; advising the public on records; compilation of statistics; and preparation and engrossing of documents disposing of Crown land including leases, letters patent and licences of occupation.

# LEGISLATION

At the part of the 1968-9 Session of the Legislature that commenced on the 30th day of September, 1969, and prorogued on the 17th day of December, 1969, amendments were made to The Wolf and Bear Bounty Act with regard to the payment of wolf bounties by regional municipalities.

Section 1 of the Act was amended by adding a new clause to define "county" as including a regional municipality.

Section 2 of The Wolf and Bear Bounty Amendment Act, 1970, provides for an extension of the six-month period for making applications in respect of wolves killed in the Regional Municipality of Ottawa-Carleton after the 31st day of December, 1968, and before October 31, 1969. Provided the skin is produced to the Treasurer of that regional municipality on or before the 31st day of December, 1969, the person who killed the wolf is not disentitled to a bounty by reason of not producing the skin within six months after the killing of the wolf.

Under section 3, this Act was deemed to have come into force on January 1, 1969.

This amending statute appears in the 1968-9 annual statutes as Chapter 139.

At the part of the Session of the Legislature that commenced on the 24th day of February, 1970, and adjourned on the 26th day of June, 1970, two statutes administered by the Department were enacted, and amendments were made to five other statutes administered by the Department.

## THE BLACKWELL-LAURIE BOUNDARY ACT, 1970

This new Act fixes the boundary between the geographic Township of Blackwell and the geographic Township of Laurie in the Territorial District of Thunder Bay and amends letters patent issued with descriptions that are inconsistent with such boundary. This Act came into force on June 26, 1970, and appears in the 1970 annual statutes as Chapter 24.

## THE FISHERIES LOANS ACT, 1970

This new Act provides for loans to fishermen and others affected by the prohibition of the taking of fish by reason of pollution.

Section 1 defines "Minister" as the Minister of Lands and Forests.

Section 2 authorizes the Minister to make loans with or without interest in such amounts and upon such terms and

conditions as he considers appropriate to persons carrying on the business of commercial fishing or any other business dependent in whole or in part on the taking of fish from waters in which such taking has been prohibited by reason of the contamination of fish resulting from pollution of the waters.

Section 3 authorizes federal-provincial agreements respecting the sharing of such loans.

Section 4 provides that the monies required shall be paid out of the Consolidated Revenue Fund.

Section 5 provides that the Act came into force on April 20, 1970. This Act appears in the 1970 annual statutes as Chapter 10.

## THE FOREST FIRES PREVENTION AMENDMENT ACT, 1970

Section 16 of The Forest Fires Prevention Act, 1968, was amended by adding a new subsection 2 which provides that the provisions of section 16 do not apply to material that has been ground, chipped or shredded in an installation approved in the work permit authorizing the clearing of the land.

This Act came into force on May 14, 1970, and appears in the 1970 annual statutes as Chapter 13.

## THE GAME AND FISH AMENDMENT ACT, 1970

Section 1 of The Game and Fish Act, 1961-62, was amended by adding the following definitions of a fishing preserve and a wolf:

7b. "fishing preserve" means an artificial or man-made body of water lying wholly within the boundaries of privately-owned land, containing water from surface run-off, natural springs, ground water or water diverted or pumped from a stream or lake but not being composed of natural streams, ponds or lakes or water impounded by the damming of natural streams and in which fish propagated under a licence or fish taken under a commercial fishing licence are released for angling purposes;

31. "wolf" means any of the species *Canis lupus* L. or *Canis latrans* Say.

Section 19 of the Act was amended by adding new subsections 2 and 3. New subsection 2 prohibits the use of a vehicle or vessel for the purpose of chasing, pursuing, worrying, molesting, killing, injuring or destroying any animal or bird. Subsection 3 provides that subsection 2 does not apply to a farmer or to a party of farmers in the defence or preservation of the property of one or more of them.



Section 22 of the Act was amended by adding two new subsections. New subsection 2 makes it an offence to hunt any animal or bird between one-half hour after sunset and one-half hour before sunrise of any day. New subsection 3 makes it an offence to use, while hunting, any device capable of throwing or casting rays of light on any object.

Section 23 of the Act was amended to bring it in line with the amendments to section 22 and authorize the use of a light while hunting under a raccoon licence. In addition, the name of this licence was changed so that it makes clear that it is a licence to hunt raccoon at night.

Section 29 of the Act was re-enacted so as to require a greater control over imported animals and birds and their progeny. To strengthen the intent of the section, the element of "into natural cover" was removed from the offence and a new subsection 2 was added making it an offence to permit any animal or bird imported into Ontario or propagated from stock imported into Ontario to escape.

Subsection 2 of section 34 of the Act was amended by striking out the word "shipping" wherever it appeared in the subsection, and subsection 8 of section 34 was amended by inserting after "shall" in the second line the words "while hunting" to make it clear that the required badge must be worn only while hunting.

Section 39 of the Act was amended by adding subsections 5, 6 and 7 making it an offence for a non-resident to take more than one black bear under a licence to hunt bear and making provision for party hunting.

Section 51 of the Act was amended by adding a new subsection 2 which exempts a person or game hunting preserve exempted under the regulations from the provisions of section 51.

Section 64 of the Act was amended by adding to subsection 1 the words "to propagate and sell bass and trout" after the word "licence" in the seventh line thus combining the two licences into one licence, and, by striking out the word "licence" in subsection 2 of section 64 and inserting the words "commercial fishing licence" clarifying that the exception therein does not apply to angling licences.

A new section, section 64a was added to the Act establishing the requirement of a licence to own or operate a fishing preserve. Under subsection 2 of section 64a subsection 1 does not apply to a person or a fishing preserve exempted under the regulations.

Section 72 of the Act was amended by adding a subsection 4 authorizing export permits for non-residents in respect of animals or birds.

Subsection 2 of section 80 of the Act was amended by adding section 387 of the Criminal Code to the subsection in order to bring this criminal offence within the purview of the subsection. New subsections 2a and 2b were added to section 80. Subsection 2a provides that upon the conviction of a holder of a licence mentioned in subsection 1 of section 71 of an offence against section 386 or 387 of the Criminal Code and committed in respect of live game or a wolf held under the licence, the court has a discretionary power of cancelling the licence. Subsection 2b authorizes the court in making a conviction for careless hunting under section 18 of the Act to order that the convicted person shall not apply for or procure a licence to hunt except, upon the successful completion of an examination. Subsection 3 of section 80 of the Act was amended to incorporate the new principle set out in subsection 2b.

The regulation-making section of the Act, section 83, was appropriately amended to provide for the aforementioned amendments.

This Act came into force on June 26, 1970, and appears in the 1970 annual statutes as Chapter 58.

## THE LOGGERS' SAFETY AMENDMENT ACT, 1970

A number of amendments were made to The Loggers' Safety Act to strengthen and up-date certain sections.

Clause b of section 1 of the Act was amended to expressly bring within the definition of "logger" an employee of an operator in the course of his employment on a site on which logging is conducted.

Clause c of section 1 of the Act was amended to include within the definition of "logging" the operation of measuring of logs and thereby include scalers within the purview of the Act.

Subsection 2 of section 2 of the Act was amended by adding the words "and for his personal use" at the end of the subsection to strengthen the intent of the subsection.

Subsection 1 of section 9 of the Act was repealed and the following substituted therefor:

1. Where an accident, industrial disease, explosion or fire causes bodily injury to a logger whereby he is prevented or is likely to be prevented from working beyond the day of the occurrence, a notice of the occurrence in the prescribed form shall be delivered or mailed to the chief officer by the operator.

Subsection 2 of section 9 of the Act was repealed and the following substituted therefor:

2. Such notice shall be delivered or mailed by the operator within three days after he learns of an occurrence mentioned in subsection 1.

Subsection 1 of section 10 of the Act was amended by striking out the words "critically injured" in the first line and substituting the words "hospitalized through injury".

This Act came into force on September 1, 1970 and appears in the 1970 annual statutes as Chapter 12.

## THE PROVINCIAL PARKS AMENDMENT ACT, 1970

The Provincial Parks Act was amended by adding new section 3c which provides for the appointment of advisory committees for one or more provincial parks.

This Act came into force on May 14, 1970, and appears in the 1970 annual statutes as Chapter 17.

## THE PUBLIC LANDS AMENDMENT ACT, 1970

Amendments were made to The Public Lands Act effecting

the discontinuance of the reservation of trees in dispositions of public lands for summer resort locations.

Subsection 4 of section 17 of the Act was amended by striking out the words "all timber and trees standing, being or thereafter found growing thereon, and,".

Section 63 of the Act was amended by adding three new subsections. New subsection 1a voids existing reservations of trees on public lands granted for summer resort locations. New subsection 1b voids all reservations of trees contained in letters patent dated on or before April 1, 1869. New subsection 1c provides that the above-mentioned subsections 1a and 1b do not affect the rights of the holder of a licence under The Crown Timber Act subsisting on the day this Act came into force.

Section 3 of The Public Lands Amendment Act, 1970, strikes out the habenda in letters patent dated the 8th day of July, 1909, and the 12th day of July, 1909, granting to the Methodist Church lots 30 and 31 on the south side of Tenth Street in the Townplot of Gowganda in the Territorial District of Nipissing.

This Act came into force on June 26, 1970, and appears in the 1970 annual statutes as Chapter 59.

# REGULATIONS

Thirty-seven regulations made under the authority of Acts administered by the Department of Lands and Forests were made and filed during the fiscal year from April 1st, 1969, to March 31st, 1970.

## THE CROWN TIMBER ACT

O. Reg. 219/69—Amends Reg. 69 of R.R.O. 1960 ..... General

## THE FOREST FIRES PREVENTION ACT, 1968

O. Reg. 119/69—New ..... Fire Districts  
O. Reg. 305/69—New ..... Restricted Fire Zone  
O. Reg. 336/69—Amends O. Reg. 119/69 ..... Fire Districts  
O. Reg. 346/69—New ..... Restricted Fire Zone  
O. Reg. 349/69—New ..... Restricted Fire Zone  
O. Reg. 355/69—Revokes O. Reg. 349/69 ..... Restricted Fire Zone

## THE FRESHWATER FISH MARKETING ACT, 1968-69

O. Reg. 302/69—New ..... General

## THE GAME AND FISH ACT, 1961-62

O. Reg. 235/69—Revokes O. Regs. 294/67 and 241/68 ..... Open Seasons—Rabbit and Squirrel  
O. Reg. 237/69—Revokes O. Regs. 272/67, 369/67 and 279/68.. Open Seasons—Game Birds  
O. Reg. 318/69—Amends O. Reg. 25/69 ..... Open Seasons—Deer, Moose and Black Bear  
O. Reg. 319/69—Amends O. Reg. 46/65 ..... Fishing Licences

O. Reg. 344/69—Amends O. Reg. 46/65	Open Seasons—Deer, Moose and Black Bear
O. Reg. 369/69—Amends O. Reg. 277/68	Hunting on Designated Crown Land and in Provincial Parks
O. Reg. 381/69—Amends O. Reg. 22/65	Crown Game Preserves
O. Reg. 391/69—Amends O. Reg. 237/69	Open Seasons—Game Birds
O. Reg. 405/69—Amends O. Reg. 25/69	Open Seasons—Deer, Moose and Black Bear
O. Reg. 406/69—Revokes O. Regs. 295/67 and 297/68	Open Seasons—Fur-Bearing Animals
O. Reg. 409/69—Revokes O. Regs. 184/64, 232/68 and 384/68	Fire-Arms
O. Reg. 433/69—Amends O. Reg. 391/69	Open Seasons—Game Birds
O. Reg. 473/69—Amends O. Reg. 22/65	Crown Game Preserves
O. Reg. 30/70—Amends O. Reg. 25/69	Open Seasons—Deer, Moose and Black Bear
O. Reg. 98/70—Amends O. Reg. 25/69	Open Seasons—Deer, Moose and Black Bear
O. Reg. 99/70—New	Wolves in Captivity
O. Reg. 100/70—Amends O. Reg. 229/63	Hunting Licences—Issuance

## THE LOGGERS' SAFETY ACT, 1962-63

O. Reg. 268/69—Amends O. Reg. 317/64	General
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## THE PROVINCIAL PARKS ACT

O. Reg. 245/69—Amends Reg. 498 of R.R.O. 1960	Designation of Parks
O. Reg. 474/69—Amends Reg. 498 of R.R.O. 1960	Designation of Parks
O. Reg. 61/70—Revokes Reg. 499 of R.R.O. 1960 and O. Regs. 214/61, 123/62, 71/65, 92/65, 5/66, 175/66, 209/67, 257/67, 115/68 and 202/68	General

## THE PUBLIC LANDS ACT

O. Reg. 200/69—New	Restricted Areas—District of Thunder Bay, Townships of Blackwell, Conacher, Forbes, Goldie, Hagey, Haines, Laurie and the Dawson Road Lots.
O. Reg. 218/69—Amends Reg. 524 of R.R.O. 1960	Sale of Public Lands.
O. Reg. 238/69—New	Restricted Areas—Districts of Cochrane and Timiskaming.
O. Reg. 347/69—New	Restricted Areas—District of Cochrane, Townships of Fournier, Lamarche, Clute and Hanna.
O. Reg. 447/69—Amends Reg. 524 of R.R.O. 1960	Sale of Public Lands.
O. Reg. 12/70—Amends O. Reg. 347/69	Restricted Areas—District of Cochrane, Townships of Fournier, Lamarche, Clute, Hanna and Lamarche.
O. Reg. 113/70—Amends O. Reg. 370/61	Sale of Public Lands.

## THE SURVEYS ACT

O. Reg. 301/69—New	Establishes the Ontario Co-ordinate System.
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## THE SURVEYORS ACT

1377/69	2918/69
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## THE SURVEYS ACT

2926/69
2496/69

## THE LOGGERS' SAFETY ACT, 1962-63

## MISCELLANEOUS

2773/69	4055/69	240/70	740/70
3737/69	4417/69	552/70	
3880/69	228/70	636/70	

## THE MUNICIPAL ACT

1671/69	3588/69	816/70
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## THE NIAGARA PARKS ACT

811/70

## THE PROVINCIAL PARKS ACT

2399/69	4408/69	341/70
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Orders-in-council recommended by the Minister of  
Lands and Forests in the Year 1969-70

THE CROWN TIMBER ACT

1272/69	1654/69	1911/69	2572/69	2866/69	3454/69	75/70	626/70
1273/69	1657/69	1987/69	2579/69	2867/69	3564/69	155/70	627/70
1276/69	1659/69	2010/69	2609/69	2898/69	3571/69	187/70	643/70
1292/69	1661/69	2041/69	2664/69	2915/69	3583/69	230/70	647/70
1374/69	1663/69	2048/69	2668/69	2916/69	3671/69	238/70	662/70
1401/69	1738/69	2064/69	2669/69	2964/69	3757/69	260/70	663/70
1412/69	1743/69	2095/69	2670/69	2965/69	3781/69	291/70	664/70
1413/69	1749/69	2117/69	2675/69	2966/69	3791/69	307/70	665/70
1415/69	1755/69	2135/69	2686/69	3079/69	3792/69	310/70	730/70
1416/69	1756/69	2136/69	2687/69	3137/69	3801/69	315/70	749/70
1417/69	1767/69	2197/69	2688/69	3139/69	3837/69	323/70	755/70
1418/69	1768/69	2201/69	2693/69	3145/69	3873/69	363/70	756/70
1419/69	1785/69	2218/69	2699/69	3187/69	4059/69	378/70	757/70
1420/69	1813/69	2219/69	2700/69	3188/69	4259/69	458/70	789/70
1423/69	1818/69	2227/69	2731/69	3189/69	4260/69	459/70	790/70
1443/69	1838/69	2234/69	2806/69	3190/69	4261/69	460/70	795/70
1450/69	1883/69	2264/69	2819/69	3191/69	4267/69	544/70	796/70
1452/69	1884/69	2266/69	2820/69	3192/69	4268/69	545/70	809/70
1487/69	1885/69	2297/69	2822/69	3200/69	4269/69	546/70	839/70
1490/69	1890/69	2372/69	2835/69	3219/69	4331/69	547/70	840/70
1555/69	1892/69	2373/69	2837/69	3344/69	4352/69	548/70	872/70
1562/69	1899/69	2378/69	2838/69	3447/69	4416/69	549/70	873/70
1642/69	1905/69	2379/69	2850/69	3448/69	4436/69	550/70	884/70
1643/69	1907/69	2380/69	2851/69	3449/69	4448/69	565/70	892/70
1644/69	1909/69	2424/69	2853/69	3450/69	4500/69	568/70	
1653/69	1910/69	2514/69	2865/69	3453/69	4568/69	614/70	

THE EXECUTIVE COUNCIL ACT

4046/69

THE PUBLIC LANDS ACT

1270/69	2809/69	4048/69	366/70
1392/69	2862/69	4056/69	369/70
1564/69	2903/69	4156/69	374/70
1742/69	2959/69	4192/69	462/70
1798/69	2963/69	4375/69	469/70
1876/69	3018/69	4386/69	542/70
1967/69	3283/69	4598/69	554/70
2109/69	3353/69	4642/69	580/70
2216/69	3452/69	30/70	630/70
2221/69	3517/69	31/70	642/70
2228/69	3587/69	95/70	645/70
2425/69	3703/69	131/70	646/70
2518/69	3720/69	245/70	650/70
2519/69	3818/69	262/70	653/70
2601/69	3820/69	360/70	739/70
2623/69	3857/69	362/70	836/70
2774/69	3949/69	364/70	851/70

THE FOREST FIRES PREVENTION ACT, 1968

3138/69

THE FORESTRY ACT

2238/69	644/70
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THE FRESHWATER FISH MARKETING  
ACT, 1968-69

2870/69	2932/69	2935/69
2901/69	2934/69	

THE GAME AND FISH ACT, 1961-62

2304/69	3343/69	4032/69	551/70
3112/69	3562/69	4130/69	602/70
3131/69	3713/69	4407/69	
3193/69	4024/69	156/70	

THE INTERPRETATION ACT

1272/69	1276/69	1401/69	4331/69
1273/69	1292/69	2117/69	

# FEDERAL-PROVINCIAL CO-OPERATIVE AGREEMENTS

## AMENDING AGREEMENT UNDER THE FORESTRY ACT (ONTARIO)

By an agreement dated the 8th day of May, 1969, between the National Capital Commission, Her Majesty the Queen in right of Ontario represented by the Minister of Highways and Her Majesty the Queen in right of Ontario represented by the Minister of Lands and Forests, the Commission granted a licence to Highways to allow the Department of Highways to enter on certain lands of the Commission for the purpose of surveying, fencing and constructing Highway 417 through the greenbelt, in the Township of Gloucester in the Regional Municipality of Ottawa-Carleton. The Commission agreed to convey to Ontario the lands required for highway purposes when the limits of the required right-of-way were established, and the Minister of Lands and Forests released the lands so required from the terms of an agreement under The Forestry Act with the Commission.

## WELLAND CANAL

By an agreement dated the 15th day of July, 1969, between the Government of Canada represented by the Minister of Transport acting under the authority of Order-in-Council PC 1969-1047, and the Government of the Province of Ontario represented by the Minister of Lands and Forests acting under the authority of Order-in-Council OC 691/69, Canada and Ontario agreed that Ontario has the administration and control of certain lands comprising a portion of the bed of the Welland River.

## FRESHWATER FISH MARKETING CORPORATION

An agreement dated the 11th day of August, 1969, between the Government of Canada represented by the Minister of Fisheries and Forestry, and the Government of the Province of Ontario represented by the Minister of Lands and Forests, provides for the sharing by Ontario with Canada of initial operating and establishment expenses of the Freshwater Fish Marketing Corporation and any losses incurred as a result of the guarantee of repayment of loans made by Canada or any bank to the Corporation. Under the agreement, Ontario agrees to grant to the Corporation authority to exercise powers of regulation in relation to the marketing of fish taken within a designated part of Ontario and to arrange for compensation of fish processors for plant and equipment used for storing, processing or preparing for market fish taken in the designated area and rendered redundant by reason of the authorized operations of the Corporation.

## FOREST RESEARCH STUDIES

By an agreement dated the 9th day of January, 1970, between the Government of Canada represented by the Minister of Fisheries and Forestry acting under the authority of Order-in-Council PC 1969-2/2231, and the Government of the Province of Ontario represented by the Minister of Lands and Forests and the Minister of Public Works acting under the authority of Order-in-Council OC 4046/69, the agreement respecting forest research studies dated the 31st day of January, 1963, was terminated and a new agreement made. Under the new agreement, Canada was permitted to occupy and use the Forest Insect Laboratory at Sault Ste. Marie for the purpose of entomological research until March 31, 1970, and Ontario agreed to lease the laboratory to Canada for a further term not exceeding five years commencing on April 1, 1970. Any equipment or fixtures supplied and installed by Canada in the Laboratory of Forest Pathology at the Southern Research Station of the Department of Lands and Forests at Maple and not removed prior to October 31, 1968, became the property of the Province.

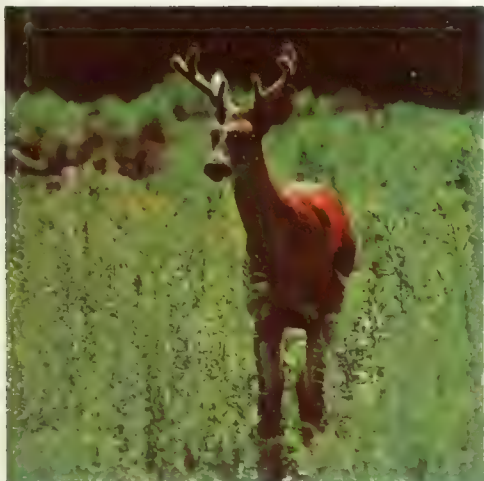
By an exchange of letters dated May 7, 1968, and May 24, 1968, the Deputy Ministers agreed to co-ordinate the forest research programs of the Departments.

## STATEMENT OF PATENTS

*Statement of Patents, etc., Issued During the Year  
ending March 31, 1970*

PATENTS		
Agriculture .....	8	
City-Town .....	34	
Free Grant .....	3	
Miscellaneous .....	113	
Summer Resort .....	1065	
Release of Pine .....	<u>3</u>	1226
LEASES		
Algonquin Park .....	16	
Crown .....	33	
Rondeau Park .....	45	
Easement .....	1	
Water Lot .....	<u>7</u>	102
LICENCES OF OCCUPATION ....	67	67
CANCELLATIONS		
LEASES		
Algonquin Park .....	20	
Crown .....	13	
Lake Superior .....	1	
Rondeau Park .....	44	
Timagami .....	<u>6</u>	84
LICENCES OF OCCUPATION ....	44	44

## OPERATIONS BRANCH



*The White-Tailed Deer in Ontario, a new 24-page booklet, conveyed a wealth of information to students, naturalists and sportsmen. Photo of deer by E. W. Gorsline.*

Operations Branch is divided into six sections with duties and responsibilities as follows.

- *Office Management:* Equipment inventory; boat licensing; policy and procedure directive production; mimeograph and photo-copy reproduction service; Crown land records; staff uniforms; Legislative publication distribution; telephone credit card; telephone directory updating; identification card; personnel directory; permit to carry firearms; revolver issue; Branch personnel records; and Branch financial and records management programs.
- *Purchasing:* Purchasing of equipment, supplies and services; filling requisitions; leases and rentals; and arrangements for travel and conferences.
- *Central Supply Warehouse:* Receipt, security and distribution of equipment, supplies, uniforms and printed material; and promotion of foreign state visits.
- *Conservation Information:* Publications; weekly newsletter and press releases; material for outside agencies; display and classified advertisements; photo, slide and cut services; reference library and clipping service; and supply of information to public.
- *Conservation Education:* Display material for Department exhibits; production and purchase of motion films; film supply service; program material for radio and television; and lecture service.
- *Accident Control:* Administration of The Loggers' Safety Act; Hunter Safety Program; safety program in Provincial Parks; staff safety and first aid programs; and Workmen's Compensation.



## OFFICE MANAGEMENT SECTION

During the fiscal year, the reproduction facilities processed an average of 50,000 photo copies and 20,000 mimeograph copies per month.

The continued management of the 150,000 active files, containing Crown land records, required the recording of 135 incoming documents and the filing and retrieval of 250 files daily.

A total of 4,600 transactions (acquisitions and write-offs) were recorded in updating the equipment inventory; and 60 licences for boats were obtained.

A total of 2,500 uniform requisitions were processed to supply approximately 1,000 regular staff and 800 summer casual staff (mainly parks) with uniforms and replacement of uniform items.

Seven hundred and eighty telephone credit cards and 100 staff identification cards were issued during the year.

## PURCHASING SECTION

This Section is vitally concerned with matters of demand and supply which, in turn, require an effectively integrated program of procurement in constant operation for fulfilment of its commitments.

A primary responsibility of the purchasing function is to obtain the right material at the right price and at the right time to ensure that the Department's requirements are met immediately, economically, with the best quality available, and that over-all best value is obtained for money expended. It is a basic necessity that Purchasing keep branches, regions and districts constantly informed and advised of new products and services, and of developments on established products and services.

Over 11,000 requisitions were received, each of which had to be examined to determine what was to be ordered, either by direct purchase order, by internal requisition to the Queen's Printer for stationery and certain printing, by internal requisitions to the Department of Public Works, and, in some instances, by memoranda, and what could be supplied from stock held in Central Supply Warehouse. Many and varied details entered into the consideration and finalization of each item, and involved correspondence, telephone usage, interviewing, searching, customs clearance, and, when necessary, the calling of tenders.

Direct purchase orders issued numbered 7,911; Queen's Printer stationery requisitions, 3,512; Queen's Printer printing requisitions, 475; Central printing requisitions, 799; and Public Works requisitions, 249.

Directions and oversight were maintained of leases and rentals of property for the Department throughout the province in conjunction with the Department of Public Works. Telephone service was another matter overseen by this Section in its wide-ranging and diversified activity.

## CENTRAL SUPPLY WAREHOUSE SECTION

During the fiscal year, the Section received a total of 374 tons of supplies and equipment, and shipped a total of 277 tons. Shipments were made by express, freight, transport and mail, and by internal supply to Department offices.

Thirty types of licences were distributed to District offices and approximately 3,500 issuers on 16,300 invoices. The 2,400,000 licences included hunting, angling, bait fish, roll net, dip net, frog, guide, trapping, trap-line, and dog licences.

The distribution of Provincial Park permits included 27,100 annual vehicle permits, 410,800 daily permits, and 561,000 campsite permits.

Department uniforms were stocked and delivered to personnel on requisition.

The Section participated actively on the committee responsible for the reception of government experts and state visitors.

## CONSERVATION INFORMATION SECTION

The Section worked through many media during the past fiscal year to disseminate information on the protection and management of the renewable, natural resources under the Department's administration.

### RELEASES

A newsletter of several pages circulated Department news and regulations every week in a form easily adapted by outside agencies. The mailing list of 3,500 included all newspapers, broadcasting stations and outdoor writers in Ontario, as well as magazines, trade papers, forest industries, conservation groups, recreational clubs, and a number of writers and commentators outside the province.

The French translation of the newsletter had a weekly circulation of 183.

News of more than normal urgency was supplied directly to important news outlets.

Conservation Copy carried additional material to publishers in season, while Conservation Spots supplied public service announcements to broadcasters.

Special appeals were prepared occasionally for news media to enlist public support for Department programs.

Articles and background material were supplied to outside agencies on request. Speech material was prepared for Department personnel invited to address public meetings or speak on broadcast programs.

## SERVICES

During the year, 36,500 answers were returned by mail to persons asking for information on Crown land, outdoor recreation, nature study, forest tree planting or forest industry. Numerous requests were answered by telephone. Many technical questions were forwarded to other Branches.

The Photograph Library loaned 9,500 black-and-white prints and 1,000 colour transparencies to newspapers and magazines. Sets of slides or prints were supplied on request to illustrate lectures. The library now has 42,000 negatives and 7,000 colour transparencies.

Section photographers took photographs on assignment and supplied prints from the darkroom.

The Reference Library circulated periodicals and press clippings through Head Office.

## NEW PUBLICATIONS

Scientific papers, management reports, training manuals, consolidations of Acts, posters and Provincial Park leaflets are not included in the following list of publications released during the 1969-70 fiscal year.

### FISH AND WILDLIFE

Let's Go Fishing  
Wildlife Land Management for the Ontario Landowner  
The White-Tailed Deer in Ontario  
Ontario Upland Game and Waterfowl Report  
The Fisheries of Lake Simcoe (\$1.00) (revised)  
Farm Ponds for Trout in Ontario  
Ontario Fish and Wildlife Review (periodical)  
The Ontario Commercial Fisherman (periodical)  
The Game and Fish Act and the Ontario Fishery Regulations  
Summary of the Ontario Fishing Regulations  
Summary of the Ontario Hunting Regulations  
Provisional Summary of Big Game Hunting Seasons in Ontario  
Summary of Ontario Regulations which apply to Trapping and Fur-Dealing

### OUTDOOR RECREATION

Hunter's Handbook, Part II (\$0.75)  
Data on Hunting Accidents  
Safety Around Helicopters  
Swimmer's Itch

### PROVINCIAL PARKS

Check-List of the Birds of Algonquin Provincial Park (revised)  
Check-List of the Trees, Shrubs and Woody Vines of Algonquin Provincial Park (revised)

### LAND AND WATER

The Ontario Map Catalogue  
Geographic Townships in the Province of Ontario (\$0.50) (revised)

### FORESTS

Forest Tree Planting (\$0.50)  
The Farm Windbreak  
Ontario Tree Seed Plant  
Growing Christmas Trees in Ontario (revised)  
Farm Forestry Service for You (revised)  
G. Howard Ferguson Forest Station (revised)  
Midhurst Forest Station (revised)  
Your Forests (periodical)

### RESEARCH

The Ecology of the Timber Wolf in Algonquin Provincial Park  
A Manual for the Identification of Hairs of Selected Ontario Mammals  
Common Parasites of Ontario Fishes

### ADMINISTRATION

Annual Report of the Minister of Lands and Forests  
Statistics, 1970  
Publications, 1970  
Does Nature Have a Chance?

## CONSERVATION EDUCATION SECTION

The Section conducts an educational program which consists of the type of appeals calculated to attract public interest and explain in easily understandable terms the need for the wise use of renewable, natural resources.

## VISUAL EDUCATION

The Section's film library contains 276 titles with two or more prints of many of the titles. All films are available for loan to field offices. During the year, approximately 1,400 films were shipped to field offices in answer to requests

received. Each district has its own projection equipment and has access to regional film libraries as well as the Head Office film library.

The Section also loaned 16mm motion picture projectors, 35mm slide projectors, screens, and films to Provincial Parks offering an interpretive program to the public during the summer months.

During the year, the following films were added to Head Office and field film libraries.

A Fire Called Jeremiah  
Growing Paper  
I'm No Fool in Water  
Multiply and Subdue the Earth  
On Top of the Pros  
Science in the Forest  
So Little Time  
Timber Wolf  
White-Tailed Deer  
Wilderness Day

Several thousand feet of motion picture film were available for use by television stations in Ontario.

A set of ten one-minute television shorts were prepared for distribution to Ontario television stations covering various activities of the Department such as reforestation, new type water bombing planes, nursery operations, timber scaling, training hose and pump crews, water fowl, tree pollination, provincial parks, and litter prevention.

Further work was completed on the two films started last year, one on recreation in northern Ontario and one on logging safety.

*Radio and Television.* Radio and television stations throughout the Province have been most generous in their donations of free time to the Department, and District offices regularly take advantage of these opportunities to reach the public.

## EXHIBITS

Visual conservation appeals are featured in the Department's exhibits at many of the shows and fairs in Ontario. The major exhibits handled through this Section were as follows.

*Canadian National Exhibition, Toronto. Fishes of Ontario:* An educational display of 20 varieties of Ontario's game fishes. *Wildlife of Ontario:* This display of 25 species of animals and birds is accompanied by valuable information

for students and others interested in wildlife habits and habitats. *Hunter Safety Training:* A display of safe hunting practices and good hunting manners as taught in the Hunter Training Course. *Timber:* Three animated models showing good woodlot management and the services offered by the Department regarding forestry assistance. *Indians:* Two members of the Iroquois Six Nations Reserve demonstrated their talents in leather work, bead work and woodcarving. *Forest Protection:* A cartoon display of eight causes of forest fire and how to prevent these careless happenings; also included—equipment used by a five-man forest fire fighting crew. *Information and Publication Desk:* For the purpose of answering public enquiries regarding Department activities and services. *The Conservation Poster Contest* for elementary school children from six to fourteen years of age was held again this year. A Grand Prize of \$100.00 was presented for the best poster. First, second and third prizes, in each of three age groups, in the amounts of \$50.00, \$25.00 and \$15.00, were awarded. Thirty "Honourable Mentions," ten in each age group, were presented with books.

*Central Canada Exhibition, Ottawa.* An educational display of Ontario's fish and wildlife along with Hunter Safety Training Program information; and a display of Ontario fur and its bearing on the Provincial economy.

*International Plowing Match, Lindsay.* A display of forestry practices, nursery management, and the connection of the forest with good wildlife management.

*Royal Agricultural Winter Fair, Toronto.* A display of nursery procedures, the growing and shipping of trees for reforestation projects; and good wildlife management practices.

*Canadian National Sportsmen's Show, Toronto.* An over-all display of education in conservation covering fish and wildlife management, forestry—yesterday and today, locations of all Provincial Parks, safe gun handling practices, lands and surveys display of Crown Land, Indian handicrafts, and information and publication desk.

*Aid to Districts.* Full co-operation was given to District offices participating in sportsmen's shows and agricultural fairs such as the Western Fair at London, the International Plowing Match at Paris, the Sportsmen's Show at Timmins, and the Canadian Lakehead Exhibition at Thunder Bay.

*Exhibit Awards.* Our exhibit presented at the Canadian National Sportsmen's Show won Third Place in the awards of the American Association for Conservation Information at the 1969 conference.



## LECTURE TOURS

The Department kept in touch with the public through fish and game associations, schools, church groups, service clubs and youth organizations. Illustrated lectures were given on all aspects of the Department's work.

A total of 3,043 lectures was given to audiences totalling 203,644 during the past fiscal year. The totals included 776 lectures to 64,528 school children and 885 lectures given by Ontario Forestry Association personnel to 23,337 persons.

## ACCIDENT CONTROL SECTION

Continuing development of the safety program, aimed at reduction in loss of life, personal injury and property damage, is increasing the work load, and another additional accident control officer has been added to field staff, bringing the total to twelve including three regional supervisors.

## DRIVER TRAINING

A comprehensive driver testing and training program, aimed at increasing efficiency in motor fleet management, was instituted early in 1970. Maintenance costs have been excessive, but these should be reduced by 50 per cent at least through the expected improvement in efficiency and safe driving skills. The program will be inaugurated in Pembroke Forest District on a trial basis for one year, commencing April 1, 1970, and it is expected to be put into operation throughout the Department on April 1, 1971.

## THE LOGGERS' SAFETY ACT

Enforcement of this Act is mainly a case of safety education. The large operators have excellent safety programs, generally speaking, but the smaller operators do not and cannot afford such programs, and it is in this area that our assistance is most needed. We do, however, participate in all logging safety programs wherever possible.

During the year, our officers made over 3,500 inspections under the Act, giving advice on safety matters, and issuing warnings and stop-work orders for serious infractions of the Act and Regulations.

There were 18 fatal accidents reported to us for the year 1969, an increase of four over the previous year.

## HUNTER SAFETY TRAINING

Instruction has been upgraded and a new examination for instructors put into force. All existing instructors, who

wished to continue in the program, were retested. Qualified instructors now total 1,208. Each instructor is required to conduct at least one class each year to remain on the active list, and must be re-examined every three years.

The Hunter's Handbooks, recently produced, have proven to be of considerable assistance to instructors and potential hunters. During the year, 13,973 persons received training in safe hunting.

## SAFETY IN PROVINCIAL PARKS

Field officers of the Section make frequent inspections in Provincial Parks, reporting hazardous or unsafe conditions to the proper authority for immediate remedial action. (The Section is not responsible for the beach patrol maintained in some parks.)

During the months of July and August, the Department sponsored a water-safety demonstration presented by the Ontario Safety League in 35 Provincial Parks. Not only did park visitors benefit from these demonstrations, but broad coverage of the program was obtained through television and radio broadcasts.

## WORKMEN'S COMPENSATION

Department costs for the fiscal year 1969-70 totalled \$225,320.22, a decrease of \$23,000 from the previous fiscal year. The total cost is composed of \$104,495.35 for pensions, \$17,179.84 for administrative costs, and \$103,645.03 for medical aid and compensation.

Compensable claims numbered 754, a decrease of five from the previous year. The average cost per claim was \$148.00, a decrease of \$39.00.

Fire control costs totalled \$2,057.14 of which \$1,288.29 went to actual fire fighting. Total cost decreased 58 per cent from the previous year.

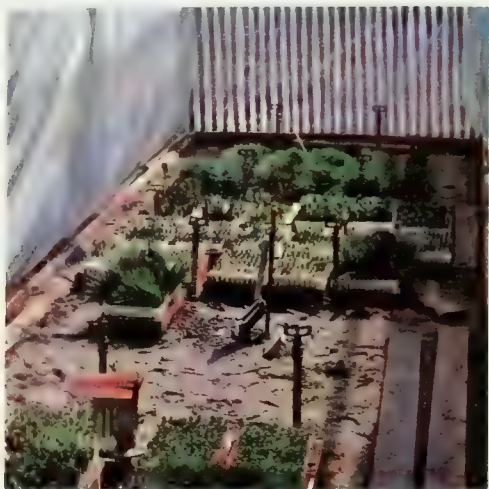
Costs in the junior ranger program increased sharply and totalled \$18,319.17 of which junior rangers accounted for \$13,796.00 and senior staff \$4,523.17, making a cost increase of 80 per cent.

There were no deaths in the fiscal year. Five new pensions for permanent disability were estimated.

*The Injury Frequency Rate* was 17.7, an increase of 0.3 over the previous fiscal year. The rate is based on lost time in relation to man-days worked.

*The Lands and Forests Safety Trophy* was won by Kenora Forest District with an injury frequency rate of 3.5. The District had a total of 56,857 man-days worked and two lost-time injuries.

# RESEARCH BRANCH



*Rooting of spruce and pine cuttings in nursery mist bed. Photo by J. F. Robinson.*

Research Branch is divided into an Administration group and three sections, each with its subordinate units, with duties and responsibilities as follows.

## ADMINISTRATION

Supervises research programs, operates and maintains Southern Research Station, and provides the following professional and technical services.

*Biomathematics and Statistics*

*Drafting*

*Mechanical*

*Library*

*Photography*

## FISHERIES SECTION

*Great Lakes Units:* Fisheries Research Stations at Glenora (Lake Ontario), Wheatley (Lake Erie), South Baymouth (Lake Huron), and Sault Ste. Marie (Lake Superior).

*Game Fish Units:* Lake Trout, Brook Trout, Smallmouth Bass, Kokanee, and Walleye.

*Discipline Units:* Selective Breeding, Parasitology, Limnology, Productivity, and Technical Studies.

## FORESTRY SECTION

*Maple Units:* Developmental, Forest Economics, Ecology, Tree Nutrition, Mensuration, Wood Science, Nursery and Plantation, Seed Research, Site, and Tree Breeding.

*Field Units:* Southwestern (Maple), Mid-Western (Port Arthur), South-Central (Dorset), Central (Sault Ste. Marie), and Southeastern (Tweed).

## WILDLIFE SECTION

The Wildlife Research Station is located in Algonquin Provincial Park. The following units are located at Maple.

*Big Game*

*Furbearers*

*Predators*

*Upland Game and Waterfowl*

*Wildlife Diseases and Parasites*

# FISHERIES SECTION

The Fisheries Research Section was made responsible for developing a research position respecting the quality of the environment, and the Supervisor became a member of the Committee on Fisheries and Wildlife Research, Science Council of Canada.

## GREAT LAKES UNITS

### LAKE ONTARIO UNIT

The sea lamprey population reached its highest level of abundance since the mid 1950s and continued to be a serious impediment to research and management progress.

The whitefish population continued to show modest signs of improvement under the experimental management system which has reduced exploitation levels. Laboratory studies of whitefish egg and fry survival under adverse environmental conditions, such as those which may now prevail in Lake Ontario, are proceeding.

Sampling stations in the Bay of Quinte were continued to monitor the deterioration of that environment for fish. Substantial areas of water, showing an oxygen depletion in late summer, have now developed.

Laboratory studies of the effect of DDT on Walleye reproduction was conducted in the spring and require repetition in 1971.

Experimental plantings of splake and kokanee continued in efforts to develop practical rehabilitation plans when sea lamprey control is realized. Lamprey wounding on experimental coho plantings were observed to be severe.

### LAKE ERIE UNIT

Further data on the condition of important fish stocks were obtained by sampling the commercial catches and through the use of experimental gear at a few specific locations.

The Index Fishing Project, designed to establish by experimental fishing a year-to-year index of the relative abundance of some fish species, provides data for predicting, at least qualitatively, the success of commercial fishing one or two years hence. Smelt continue to be abundant, and a strong year class was produced in the spring. Yellow perch reproduction was again poor.

### LAKE HURON UNIT

The long-awaited beginning of the rehabilitation program for Lake Huron, using the highly selected splake, was begun. The splake, a special hybrid which has been under selective

development in the Research Branch for some 15 years, has been specifically designed to fit the changed environment of Lake Huron and is the basic element of the international program of rehabilitation now under way in Lake Huron. The first modest plantings were made last year, and the fish will be the object of intensive research to document survival, growth and reproduction in the wild.

Kokanee studies continue to provide grounds for optimism that this salmon species may meet our expectations. Natural reproduction by planted stocks has now been recorded in both streams and on shoals.

Whitefish studies, which are now concentrated on the formerly little known, early life history stages, show promise of (a) possibilities of developing index stations where we may predict whitefish abundance four or five years earlier, and (b) possibilities of understanding the factors which determine year-class strength and subsequent population size.

### LAKE SUPERIOR UNIT

Significant numbers of native, undersized lake trout have finally made an appearance in the catches presumably as a result of the apparently meagre spawning of the past two years. There is evidence of a minor decrease in lamprey activity generally, although some areas show sharp increases. Adequate data are now available from research to provide an opportunity to reassess the major planting program.

In relation to an ecological study of rainbow trout, limnological data from Batchawana Bay and Carp and Stokely streams were gathered. A distribution study indicated that these fish were most abundant near shore in shallow water.

## GAME FISH UNITS

### LAKE TROUT UNIT

The creel census in operation since 1935 is continuing to provide information on the dynamics of populations. Work has started on a Lake Trout Monograph which is intended to bring together in one volume all information on this species. A major report on the effect of food habits on the biology of lake trout was issued this year.

### BROOK TROUT UNIT

Emphasis has been on improving the contribution of planted stocks to anglers' catches. Natural and planted populations are being studied for background information. Studies include population sizes and a measure of the yield under different levels of fishing intensity.



The effect of planting techniques and of predation on survival of planted stock is receiving intensive study.

### SMALLMOUTH BASS UNIT

Preliminary observations from a study in Greenleaf and Opeongo Lakes suggest that spawning may not be as severely regulated by actual temperatures as by rates of change, and that the thermal history of the eggs may be important to the eventual survival of young bass and thus to year class success. Important information on the influence of exploitation on the biology of smallmouth bass was obtained.

### WALLEYE UNIT

In May and June, 1,200 walleye were tagged with large numbered tags readable underwater. Studies by direct observation using Scuba gear were carried out. Density of fish related indirectly to water transparency, maximum numbers being found where visibility was 13-16 feet. Evidence indicated a schooling tendency which persists throughout the year. Feeding activity was found to be closely related to changing light intensity.

## DISCIPLINES UNITS

### LIMNOLOGY UNIT

From May to October, 19 ponds and lakes within a 40-mile radius of Toronto, of different origin, size, morphometry and water supply, were sampled. Profiles were obtained of temperature, dissolved oxygen concentration, specific conductance, pH, total alkalinity, hardness and transparency. Samples were also taken to be analyzed for phosphates, nitrates and other chemicals.

A study of higher aquatic plants was undertaken to (1) find species or communities indicative of various stages of eutrophication, (2) to determine the importance of these plant communities as nurseries or feeding grounds for young fish, and (3) to obtain information which may help in deciding when aquatic growth should be controlled.

### SELECTIVE BREEDING UNIT

Flotation testing of  $F_3$  hybrids (brook trout x lake trout) for the 1967 year class was completed at Tarentorous, resulting in 194 selected yearling brood stock.

The first plantings of 30,000 yearlings from Ontario brood stocks were made in Georgian Bay and South Bay in May.

The brood stock at Chatsworth produced about one million fertilized eggs which is sufficient to utilize present rearing facilities.

Studies of the life history and ecology of successive generations of splake have been made in natural conditions to learn what to expect of these highly selected fish when large plantings are made.

### PARASITOLOGY UNIT

The parasite *Glugea hertwigi* has infected 87 per cent of smelt sampled in Lake Erie and has spread to Lake Ontario. No evidence has yet been seen of it in Lake Huron. Work on the manual of fish parasites for Ontario is proceeding to the publication target date in 1971.

### PRODUCTIVITY UNIT

This unit is developing a practical index that will allow the classification of Ontario lakes in terms of their potential for producing pounds of fish. Total dissolved solids and mean depth have been established as the two more important indicators.

### TECHNICAL STUDIES UNIT

Recent emphasis given by several units to young-of-the-year fish has increased the need for more specialized service in identification and measurement of plankton, bottom fauna and fish food organisms.

A study to identify plankton species and populations, before and after operation of the Nanticoke Hydro development, was initiated in co-operation with Fish and Wildlife Branch, Hydro and Ontario Water Resources Commission.

### HARKNESS MEMORIAL LABORATORY

The facilities were used by Brook Trout, Lake Trout, Limnology, Parasitology, Selective Breeding, Productivity and Smallmouth Bass Units, and by staff and graduate students from the Universities of Toronto, York and Guelph and Waterloo.

### SUBLIMNOS

Within the Smallmouth Bass project, a program was initiated to develop, stimulate and investigate the feasibility of using advanced techniques of underwater habitation in freshwater research. An underwater platform, called Sublimnos, was used in Little Dunk's Bay, from which was carried out a bottom-sediment survey, population studies of aquatic insect larvae, and testing and evaluation of underwater sampling equipment.

# FORESTRY SECTION

Reflecting a greater emphasis on the problems of the environment and regional planning as well as the changes taking place within the Department, the Section Supervisor represents the Branch in matters pertaining to regional planning and Planning, Programming, Budgeting System. He is also a member of the Canada-Ontario Joint Forest Research Committee.

In addition to the work of the Units described below, co-operative studies are carried on with several Universities, the Ontario Research Foundation, the Canada Department of Fisheries and Forestry, and the wood using industry.

## MAPLE UNITS

### NURSERY AND PLANTATION

Preliminary results, from experiments on the over-winter storage of nursery stock, suggest that the use of a polyethylene bag containing the seedlings and some wet moss, kept below freezing, has some advantage over the standard method.

Frost hardiness studies continued. There appeared to be distinct differences in frost hardiness between species.

### TREE BREEDING

Results of poplar breeding show that a remarkable number of hybrids have been produced in that development of a large number of clones is underway. Effort will now be concentrated on nursery and field testing of the new hybrids produced to derive their maximum potential.

In the improvement work on spruce, very encouraging results were obtained by rooting cuttings. Some of the species show such a high percentage of rooters that there should be little trouble in propagating them clonally.

A co-operative project with Timber Branch has been initiated to assess the selected clones in spruce seed orchards. The general combining ability of the various clones, the specific combining ability of clones, and the determination of the variation and heritability of certain characteristics are being investigated.

In blister rust resistance studies on white pine, the testing period needed was reduced from 5-6 to 1-2 years by using tublings and a blister rust identification method in bark tissue.

## WOOD SCIENCE

Dealing principally with black spruce, studies are aimed at defining the specific physical and chemical wood characteristics which contribute to the superior quality of the manufactured products and to relate those characteristics to heritable and environmental factors.

Development work continues on a method for assessing the average specific gravity and compression wood content of all the wood in the bole of standing black spruce.

This Unit has co-operative projects with the Ontario Research Foundation and the University of Toronto on wood quality, wood anatomy, product quality, and chemical and mechanical pulp.

## SITE

A series of ten maps, showing land-type patterns for the eastern part of Georgian Bay, is under preparation.

The Unit has co-operated with Timber Branch and field staff in establishing criteria and selecting suitable stands for an experiment conducted jointly by Ontario, Quebec, Manitoba, the Pulp and Paper Research Institute of Canada, and the Canadian Forestry Service to determine the effect of nitrogen, phosphorus and potassium fertilizers on growth of black spruce and jack pine.

A soil-root relationship study in plantation red pine indicates yearly shifts in the distribution of growth along and between individual roots and the stem. The pattern may be related to the development stage of the tree, the condition of the aerial parts, the distribution of the roots in relation to their particular soil environment, and the variations in moisture availability throughout the growing season.

Computations were completed of long-term average monthly and annual evapotranspiration, moisture deficit and moisture surplus for all stations in Ontario.

## MENSURATION

Areas of work include the construction and measurement of present forest stand conditions, the determination of volume yield per acre, measurement of rates of growth, and the prediction of future wood production. This information is necessary in planning land use and is basic to the management of the timber resource.

Computation of yields, from permanent sample plots in hardwood types, has been complicated by the presence of faster-growing intolerant species mixed with the slower-growing tolerant species. Mixed stands will have to be treated separately.

## FOREST ECONOMICS

The Unit conducted a sociological study to determine the carrying capacity of canoe routes in Algonquin Provincial Park to provide information required in the preparation of the Algonquin Park Plan.

A continuing review of forestry and the forest industry of the USSR is maintained.

## TREE NUTRITION

Several experiments are in progress to determine the effects of various nutrient materials in different applications on a number of tree species. Techniques have been developed and described to measure the effects of nutrient treatments.

Analyses of foliar samples and growth data from black spruce in the Kinoje Lake area (51°32' N, 81°50' W) indicated a correlation between volume growth at the tree base and foliar nitrogen.

## SEED RESEARCH

Preliminary studies have indicated a meaningful relationship between seed size and density and rate of seedling growth in white and black spruce and jack pine. The objective of continuing studies is to define this relationship more closely.

A study of jack pine seed showed a reduced germination rate for smaller seeds and a decrease in total germination with decreasing density of the seed lots. Uniformly, fast-growing, seedlings may be best obtained by eliminating small and low-density seed.

## ECOLOGY

The program involves studies of the developmental relationships between tree species and their environments, and includes physiological investigations of host responses to environmental stress (including biological pressures). In particular, the studies provide information basic to the management of the hardwood forests.

Studies of physio-ecological aspects of yellow birch regeneration revealed that pigmentation is a useful ecological display of integrated light value and seedling vigour, especially in partially cut stands where maple and birch management are combined.

Data on the extent, severity and variability of logging damage were gathered during an operation in Algonquin Provincial Park maple stands. Information resulting from the interpretation was incorporated into the management program.

## DEVELOPMENTAL

A design change in the air conditioning of the greenhouse resulted in a much more efficient system.

A number of items were developed including a pack and dispenser for handling herbicide pellets, an improved method of handling groups of seeds, and a special dispenser for mixing fertilizer formulae. The feasibility of field greenhouse designs was investigated.

## FIELD UNITS

### NORTHERN ONTARIO

Earlier studies of cut-over areas indicated the strong numerical dominance of balsam fir over more desirable white spruce in the natural regeneration, emphasizing the need for control and management information for balsam fir. As an indirect control, the possibility of influencing flower and seed production of balsam fir with synthetic auxins is being investigated. As a direct control of balsam fir seedlings, a range of scarification treatments was conducted on 85 acres of a white spruce seed tree cutting.

A series of micro-environmental studies was initiated to determine the natural factors promoting or inhibiting balsam fir germination.

A wood-quality study of trembling aspen, undertaken on cut-over areas supporting poplar regeneration up to thirty years of age, revealed no reliable relationships between numerous external features and wood quality. A new study is examining growth and wood quality in relation to soil and site features.

### CENTRAL ONTARIO

Field and laboratory studies continued on nutrition, growth and the productivity ecology of spruce, as well as species and racial variation in the spruce genus. Root systems were excavated from a range of conditions; biomass and chemical data were collected.

Tubed seedlings, representing 28 spruces, 50 provenances and 14 forms and hybrids, were out-planted in experiments covering a complete range of plant hardiness zones and site regions in Ontario. Taxonomical, physiological and genetic relationships within and between spruce species will be investigated.

### SOUTH-CENTRAL ONTARIO

The work of the Unit was re-organized to provide direct assistance to management of the hardwood forests in Algonquin Provincial Park. This included interpretation of new aerial photography to locate the stands of sugar maple which show promise of being suitable for continued production



under a partial cutting regime. Maps were prepared for the major hardwood licensed areas showing the proportion of such areas which have not been cut heavily in the past. Ground inspection was completed in the current cutting areas, and cruise data utilized in guiding timber marking crews. Some diameter-increment data were obtained to aid in predicting growth of treated stands.

## SOUTHWESTERN ONTARIO

This Unit is attempting to develop practical techniques for the selection, mass production, establishment and culture of fast growing veneer-quality phenotypes of the commercially important hardwood species in the swamps and uplands of southern Ontario.

Experiments in Greenoch and Beverly Swamps have shown that heavy mechanical thinnings are more effective in promoting growth than is heavy or medium chemical thinning.

The use of a misting bed for propagating silver maple by rooting cuttings has resulted in a great improvement over methods previously used.

Six fast growing, well formed, lumber-type eastern cottonwood and three Jackii poplar were reproduced by hardwood cuttings. Site suitability studies can now commence. Work has also been started on the suitability of lumber-type willows.

Six hundred two-year-old silver maple seedlings were outplanted in the Newell Tract for evaluation with respect to site, strain and individual superiority.

Tests are continuing in an effort to develop rodent and deer repellents with sufficient persistence for practical use in establishing hardwoods under swamp conditions. Creosote and Lysol in various mixes have been applied to silver maple in rodent infested swamps. Evaluation will continue for five years.

Studies continue on various methods, including the use of tublings and nurse crops, for producing suitable hardwood material on upland hardwood sites.

## SOUTHEASTERN ONTARIO

Results of tests on the use of pelleted herbicides, to kill or reduce Ribes in white pine areas, indicate that in this form, handling and application are much easier than spraying. A final report on effectiveness of the pellets will be completed next year.

Examination after three to seven years of the growth of basswood nursery stock, planted in the spring following cutting, revealed that basswood grew better in small openings or in cut strips than in the open or dense shade.

# WILDLIFE SECTION

The Supervisor has assumed responsibility for organizing the Research Branch programs along systems rather than disciplines lines. A practical application of this has been the studies of the effects of proposed northern watersheds diversions.

## FURBEARERS

The activities of this Unit were restricted during the period because of the leave-of-absence of the scientist-in-charge, Mr. A. B. Stephenson, who was on loan to the Quebec government on a special assignment.

Essential long-term studies of beaver populations were continued in Algonquin Provincial Park, Central and West Patricia, and in the Round Lake Indian Band area. These were conducted under the supervision of the Section Supervisor.

## WILDLIFE DISEASES AND PARASITES

As a result of the existing surveillance procedure, an increased mortality in Canada geese and ring billed gulls became apparent and was specifically investigated.

The "Manual of Common Parasites, Diseases and Anomalies of Wildlife in Ontario" was expanded to include four additional wildlife parasites.

A severe die-off of Canada geese in the Lake Erie marshes was investigated and attributed to lead poisoning caused by the ingestion of lead pellets while feeding from the bottoms of heavily hunted lakes and marshes.

Over 100 red fox pups were collected for rabies investigators. A wild rabies outbreak was then studied under laboratory conditions.

*Blue and snow geese trapped in a drive at moulting time on Cape Henrietta Maria. Photo by H. Lumsden.*



A program was started to develop a baiting system for the administration of oral vaccine to control rabies.

A technique is being refined so that, by conducting aerial track surveys in various parts of an endemic rabies area each winter, predictions may be made of potential rabies outbreaks.

## UPLAND GAME AND WATERFOWL

A paper describing the function of the shoulder spot display of grouse has been completed.

Work on the development of a technique for measuring productivity of snow geese was completed. The breeding season for these birds was the latest in the eight years experienced on Cape Henrietta Maria. It was also the second poorest in terms of production. This was attributed to a late and cold spring.

The Kinoje Lake nesting study of Canada geese, supported by the Mississippi Flyway Council, entered its third year. Egg laying probably started on April 23. The average clutch size was 4.72 eggs. Nest success was calculated at 77 per cent, about the same as the two previous years.

## BIG GAME

Studies were continued on deer to gather information to assist management. Data were collected on sex, age, weight, body measurements, date and location of kill for the harvest in the Canonto study area.

The work continued on determining the effects of snow cover on distribution and survival of deer in Ontario.

Plots established in 1957 to study the effects of deer on forest regeneration were tallied.

A preliminary assessment was made of the population and ecology of a small herd of American bison occupying an area near the Burwash Game Preserve since 1936. Fourteen animals were observed and tracks followed. With a single exception, no tracks went beyond one-half mile from shore.

Data were collected in Kenora and Sioux Lookout Forest Districts on the weight and measurement of moose harvested.

A socio-economic study of the factors affecting moose hunting, in co-operation with York University, was initiated.

## PREDATORS

As part of the intensive predator-prey interaction study, a pack of eight wolves, four of which were fitted with radio transmitter collars, was kept in almost daily surveillance for a period of 65 mid-winter days.

The pack travelled 203 miles during 45 days and ranged over 86 square miles. Over a period of 63 days, 29 deer were killed. It is calculated that daily food consumption was eight pounds per wolf.

A survey was conducted along the Hudson Bay shoreline to establish number and distribution of polar bears.

A preliminary study, designed to investigate methods of capturing and handling free ranging black bears, was initiated as a co-operative project with North Bay Forest District.

## WILDLIFE RESEARCH STATION

The facilities of the Station at Lake Sasajewan in Algonquin Provincial Park were used by Research Branch and staff and graduate students and staff from the University of Toronto.

Field courses were held for biology students from Waterloo Lutheran University and Carleton University and for an ecological study group from Queens University.

## TECHNICAL SERVICES

This Section, a part of the Branch Administration, provides specialized professional and technical services in the following fields.

## BIOMATHEMATICS AND STATISTICS

In addition to providing consultative services to Branch scientists, other Departmental staff and members of other agencies, the following provides a resume of the Unit activities.

A "Maple Model" was developed for the hard maple content of hardwood stands in Algonquin Provincial Park, based on data from sample cruises that included a quality assessment of each hard maple stem. Determination may be made of (1) the number of trees in a hypothetical stand, (2) their distribution over the diameter class range, (3) whether pure maple or mixed wood stand, (4) which of stems are hard maple, and (5) the assignment of maple stems to one of three quality classes.

A simplistic model was developed for the annual clustering and dispersal of moose and deer.

Data on the weeviling of white pine provenances were analysed and summarized.

A stem analysis and regression analyses of black spruce from several northern sites were completed.

Data on seedlings shipped from nurseries to Districts were analysed.

Additional work was done on old and new fisheries computer programs.

## DRAUGHTING

The Unit provided maps, charts and figures for reproduction in Branch reports and scientific journals. A map and aerial photograph library is maintained.

## PHOTOGRAPHY

The staff photographer provides all photographic documentation in the laboratory and in the field required by Research Branch personnel. This is provided in black-and-white or colour, still or in motion, employing macro, semi-macro, and micro, photographic techniques.

## LIBRARY

The Library has more than doubled its capacity during the year.

An accession list of new material is issued monthly.

Title pages of 125 periodicals are circulated every two weeks. 300 requests for photostatic reproductions are received per month, and 150 requests for service per week; and 80 inter-library loans are processed per month.

## MECHANICAL UNIT

Some of the major projects completed by this Unit were:

1. Beach algae removal equipment for provincial parks.
2. Trailer-mounted telescoping tower for high-level selective cone harvesting.
3. Semi-flexible seed bed scarifier for rough, rocky sites.
4. Fish conditioning apparatus.
5. Pocket-size increment-borer sharpening device.

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# TIMBER BRANCH



*Tree harvester, Thunder Bay Forest District.  
Photo by C. Van Gernerden.*

Timber Branch is divided into two sections and their subordinate units, and one separate unit, with duties and responsibilities as follows.

## TIMBER PRODUCTION SECTION

*Silviculture Unit:* Establishment and treatment of forest crops on Crown lands and Agreement Forests, and on private lands under The Woodlands Improvement Act agreements; collection, processing, storage, distribution and improvement of tree seed; production and improvement of planting stock; and development of new equipment and techniques.

*Advisory Services Unit:* Development and direction of an active forest extension program on private lands; administration of forestry agreements with private landowners; distribution of nursery stock; assessment of silvicultural programs; and editorial and administrative services for Branch publications.

## TIMBER SALES SECTION

*Forest Resources Inventory Unit:* Continuing program of forest re-inventory on Crown lands; preparation of maps and compilation of reports for Crown Management Units; co-operative forest inventories on Company Management Units; preparation of contour plans for Provincial Parks; and air photo library and map photo service.

*Management Planning Unit:* Supervision of management plan preparation; preparation of planning manuals and volume tables; and direction of access roads programs.

*Licensing and Finance Unit:* Issuance and control of timber licences; measurement of timber cut on Crown lands and Agreement Forests; development of new methods of measurement; licensing and registration of scalers; and preparation of scaling returns.

## FOREST ECONOMICS UNIT

Mill licensing; analysis of the economics of timber production, transportation and marketing; promotion of industrial expansion; and preparation of industry directories and regional reports of timber availability.

# TIMBER PRODUCTION SECTION SILVICULTURE UNIT

The silvicultural operations of the Unit include the regeneration and tending of forests on Crown lands, lands managed under agreements such as Township, County and Conservation Authority Forests, and Lands managed under The Woodlands Improvement Act.

Forests may be regenerated by natural or artificial means. Site preparation is usually necessary to disturb the forest floor and top soil, creating more suitable conditions for natural regeneration, seeding or planting. Site preparation also promotes better survival and growth.

The tree seed is self-sown in natural regeneration. The site preparation is done adjacent to a seed source, or the harvest system may be modified with the retention of strips of green timber or single trees to provide the seed.

Artificial regeneration involves site preparation of large areas for planting and seeding. Nursery stock is planted by machine or by hand. Tubed seedlings are grown in greenhouses and planted by hand. Seeding may be done from the air or from the ground.

Tending includes treatments such as cleaning, herbicide spraying for release, thinning, improvement cutting, and pruning during the life of the forest.

## COMPARISON OF AVERAGE ANNUAL AREA CUT OVER AND AREA REGENERATED ON CROWN LANDS (acres)

Average Annual Cutover, 1965-67 .....	395,000
Average Area regenerated without silvicultural treatment, 1966-68.....	132,500
Area regenerated by silvicultural treatment, 1969-70 .....	133,500

## SEED COLLECTION

The inventory of forest tree seed in storage at the Ontario Tree Seed Plant at Angus, as of June 1, 1969, was about 2,370,000,000 viable seeds of 45 species, weighing 386,000 ounces or over 12 tons, and valued at approximately \$400,000. The 1969 crop was a good crop year for the pines and a number of other species but a poor one for spruce. The volume of red pine cones collected was the largest in more than 25 years.

## 1969 SEED CROP

Species	Bushels Collected
White Pine .....	2,385
Red Pine .....	4,130
Jack Pine .....	4,650
Scotch Pine .....	180
Black Spruce .....	408
White Cedar .....	195
Black Walnut .....	5,370
Other Species .....	407
TOTAL .....	17,725

## TREE IMPROVEMENT

Through application of the scientific principles of forest genetics, we are improving the quality and increasing the quantity of available seed. Our approaches include the selection of additional "plus trees", the development of seed production areas, and the planting of grafted trees in seed orchards. The program is concerned mainly with white pine, red pine, jack pine, white spruce, black spruce and red spruce.

During the year, we collected 8,200 scions from "plus trees"; these were grafted at our co-operating nurseries. A total of 18.0 acres of seed production area was thinned, released or improved in other ways for seed production purposes. Planting of 1,500 grafted trees was completed on 11.0 acres of seed orchard.

As of March 31, 1970	Number	Acres
Seed Production Areas	27	304.5
Seed Orchards	11	106.8

## NURSERY SOIL MANAGEMENT

Our objective is to maintain the balance of soil nutrients to produce top-quality seedlings. During the year, 375 soil samples and 428 plant samples (consisting of 5,600 seedlings) were analyzed for chemical composition and physiological properties. The analysis data is used to evaluate soil and plant conditions and in the preparation of the soil amendment program needed to produce high quality stock.

Herbicides and fertilizers are being tested constantly. When a new technique proves effective in nursery practice, it is used to control weeds and increase seedling quality.

Disease and nutrient studies are also being carried out on a co-operative basis with staff on Research Branch, the Canada Department of Forestry and Fisheries and the University of Toronto.



## SILVICULTURAL DEVELOPMENT

This activity concerns investigation, development and evaluation of new equipment and techniques that may be used to improve the efficiency of silvicultural operations.

Current work includes development of an aerial forest fertilization program; participation in forest fertilization trials with other provinces, the Pulp and Paper Research Institute and the Canada Department of Forestry and Fisheries; investigation of new chemical herbicides and silvicides; and field-testing of a flail site preparation unit.

## SPECIAL PROJECTS

**Correctional Camps.** The Department supplied technical guidance for forestry programs carried out by seven forestry camps operated by the provincial Department of Correctional Services and the Beaver Creek Correctional Camp operated by the federal Department of Justice. The seven provincial camps provided 16,800 man-days of labour for this Department. The men cleared road right-of-ways, camp sites, fireguards and compartment boundaries; they collected cones and burned brush; and they planted trees, pruned and thinned trees, and worked on cull tree removal. The men from the federal camp worked 1,400 man-days on forestry work.

**Junior Rangers.** During July and August, the Department employs 17-year-old students under the Junior Forest Ranger Program. Some of these students spent part of their time doing work for Timber Branch. About 13,000 man-days were devoted to cone collection, nursery work, tree planting and forest tending.

*Indians, planting trees on Crown land in Kapuskasing Forest District. Photo by D. Marshall.*



## SILVICULTURAL OPERATIONS, 1969-70

	Crown Lands	Agreement Forests	*W I A	Total Acreage
<b>1. Regeneration</b>				
a) Natural				
—by site preparation ....	20,978	—		20,978
—by modified harvest cutting	8,808	429		9,237
—by seed tree system .....	13,498	—		13,498
b) Artificial				
direct seeding				
—ground .....	2,231	2		2,233
—aerial .....	8,923	—		8,923
planting				
—nursery stock	66,081	2,540	9,178	77,799
—container stock	12,995	—	—	12,995
Total Regeneration ....	133,514	2,971	9,178	145,663
<b>2. Tending</b>				
Hand cleaning .....	6,891	1,243		8,134
Herbicide spraying	42,272	257		42,529
Thinning, improvement cutting	6,111	980	4,100	11,191
Girdling, frilling				
poisoning .....	5,841	444	2,054	8,339
Pruning .....	898	1,003		1,901
Fertilization .....	1,014	44		1,058
Drainage .....	40			40
Total Tending .....	63,067	3,971	6,154	73,192
Total Area Treated ....	196,581	6,942	15,332	218,855
<b>3. Site Preparation for seeding and planting .....</b>				
	46,841	646	—	47,487

\*Agreements under The Woodlands Improvement Act

## TREES PLANTED, 1969-70

Forest District	Crown Land		Agreement Forests	Private Lands	Other	Total Trees
	Nursery Trees	Container Stock	Nursery Trees	Nursery Trees	Nursery Trees	
Chapleau .....	3,601,000	429,600				4,030,600
Cochrane .....	2,658,700	1,705,200				4,363,900
Fort Frances .....	2,303,739	88,100		204,950		2,596,789
Geraldton .....	6,607,475	30,000				6,637,475
Kapuskasing .....	5,965,600	611,000				6,576,600
Kemptville .....	384,320		1,217,179	2,123,900		3,725,399
Kenora .....	1,985,450	106,200		8,350		2,100,000
Lake Erie .....	135,000		52,400	1,320,994		1,508,394
Lake Huron .....	33,619		208,750	2,976,726		3,219,095
Lake Simcoe .....			284,250	2,852,841		3,137,091
Lindsay .....	215,814		50,250	1,347,763		1,613,827
North Bay .....	1,248,500	735,700				1,984,200
Parry Sound .....	655,000	601,800		513,600		1,770,400
Pembroke .....	1,880,000	622,000	200,000	1,191,400		3,893,400
Sault Ste. Marie .....	2,018,475	1,161,200		110,450		3,290,125
Sioux Lookout .....	2,694,100	214,800				2,908,900
Sudbury .....	6,015,225	602,800		128,825		6,746,850
Swastika .....	3,982,425	2,236,500		5,625		6,224,550
Thunder Bay .....	3,126,800	1,402,200	5,000	559,700		5,093,700
Tweed .....	700,000		103,000	901,840		1,704,840
White River .....	1,439,200	1,786,200				3,225,400
Unclassified .....					1,010,890	1,010,890
<b>TOTAL .....</b>	<b>47,650,442</b>	<b>12,333,300</b>	<b>2,120,829</b>	<b>14,246,964</b>	<b>1,010,890</b>	<b>77,362,425</b>



*Wildland tree planter, Sudbury Forest District.*

## ADVISORY SERVICES UNIT

### PRIVATE LAND FORESTRY

The intent of the private land forestry policy is to improve the management of privately-owned forest land. Ultimately, the benefits of this improvement will be an increased flow of better-quality logs and other products for wood-using industries and greater returns to woodland owners. The private land forestry program provides a free advisory service to landowners on planning and establishing plantations and tending and marketing forest crops.

## FORESTRY EXTENSION ACTIVITIES

1. Conducted tours for school groups and others at the forest tree nurseries and the Ontario Tree Seed Plant at Angus. Approximately 8,600 school children participated therein.
2. An instructional tour for landowners with agreements under the Woodlands Improvement Act. Over 100 attended and the tours are to be continued in ensuing years.
3. Co-operation in the preparation and manning of exhibits at the Toronto C.N.E., the Ottawa C.C.E.A., the London Fair and the Royal Winter Fair. Districts prepared and manned over 50 exhibits at local fairs and exhibitions.
4. Co-operation with the Ontario Department of Agriculture and Food in providing guidance to the Ontario Maple Syrup Producers' Association.
5. Co-operation in the revision of publications required to interest and instruct landowners in essentials of private land forestry.

## THE WOODLANDS IMPROVEMENT ACT

Under The Woodlands Improvement Act, 1966, landowners may enter into agreement with the Minister for improvement of their lands through tree planting and rehabilitation of existing woodlands. Department staff plant trees and carry out stand improvement in accordance with mutually agreed upon plans at no cost to the owner. The owner pays for the nursery stock and agrees to protect his woodland.

The total number of agreements in effect as of March 31, 1970, was 1,388, comprising a total area of 89,526 acres.

## AGREEMENT FORESTS

Section 2 of The Forestry Act authorizes the Minister to enter into agreements with the owners of lands suitable for forestry purposes for the management of such lands, and to make grants to any conservation authority or to any municipality to encourage and assist it in the acquisition of lands that are to be managed under such an agreement.

A total of \$117,264.86 to assist with the acquisition of 6,289.17 acres of land was paid during the year. Canada will contribute \$40,532.18 of the foregoing amount to Ontario under an agreement made between Canada and Ontario pursuant to their respective A. R. D. Acts.

## TREE DISTRIBUTION

To meet the increasing demand for planting stock, sufficient seed is sown at ten forest tree nurseries for the production of 100,000,000 trees by 1972.

PRODUCTION TARGET By DISTRICTS	Nursery	Number of Trees
Chapleau	Chapleau	2,000,000
Kemptville	Kemptville	13,889,000
Kenora	Dryden	13,242,000
Lake Erie	St. Williams	7,419,000
Lake Simcoe	Midhurst	14,186,000
Lindsay	Orono	9,117,000
Sault Ste. Marie	Thessalon	1,755,000
Sudbury	Gogama	1,600,000
Swastika	Swastika	18,267,000
Thunder Bay	Thunder Bay	18,525,000
TOTAL		100,000,000

PRODUCTION TARGET By SPECIES	Number of Trees
White Pine .....	8,200,000
Red Pine .....	15,200,000
Jack Pine .....	12,567,000
Scotch Pine .....	2,060,000
White Spruce .....	34,450,000
Black Spruce .....	22,500,000
Other Species .....	5,023,000
TOTAL .....	100,000,000

## TREES CONSERVATION

Under authority of The Trees Act, and with the approval of the Minister of Lands and Forests, counties or municipalities in territorial districts may pass by-laws with respect to private lands to restrict and regulate the destruction of trees by cutting, burning or other means. Such by-laws have been passed by the following municipalities:

*Counties:* Brant, Bruce, Dufferin, Elgin, Grey, Haldimand, Halton, Hastings, Huron, Lambton, Leeds and Grenville, Lincoln, Middlesex, Norfolk, Northumberland and Durham, Oxford, Peel, Perth, Renfrew, Waterloo, Welland, Wellington, and Wentworth.

*Townships:* Brunel and Hudson.



# SUMMARY OF THE FORESTRY ADVISORY AND ASSISTANCE SERVICES PROVIDED TO PRIVATE LANDOWNERS AND ORGANIZATIONS, 1969-70

Total number of inquiries received .....		17,720
Number of field inspections made.....		3,619
(a) to advise on planting .....	1,276	
(b) to advise on forest management .....	902	
(c) to advise on maple syrup and Christmas trees .....	135	
(d) for miscellaneous purposes, e.g., insects, windbreaks .....	1,306	
Number of management programs prepared .....		784
(a) advisory services programs.....	306	
(b) Woodlands Improvement Act programs .....	478	
Total number of acres of private forest land for which management programs were prepared .....		40,711
(a) advisory services programs.....	9,610	
(b) Woodlands Improvement Act programs .....	31,101	
Total number of trees planted on private lands.....		14,247,000
(a) advisory services programs .....	7,172,839	
(b) Woodlands Improvement Act programs .....	7,074,125	
Total number of acres of forest land treated under the Woodlands Improvement Act .....		15,332
(a) reforestation .....	9,178	
(b) woodlands improvement .....	6,154	
Total volume of timber marked under the advisory services program .....		
(a) saw timber .....	1,035,700 cu. ft.	
(b) pulpwood.....	6,141 cords	
Activities with youth groups—total number of groups .....		336
(a) 4H Forestry clubs .....	20	
(b) 4H Conservation clubs.....	8	
(c) Resource Rangers .....	8	
(d) other groups—Boy Scouts, Girl Guides, etc.....	300	
Public education activities .....		1,092
(a) newspapers—articles .....	298	
—paid advertisements .....	18	
(b) number of radio and T.V. programs arranged .....	32	
(c) number of field days and tours.....	249	
(d) meetings with municipal or conservation authority officials .....	282	
(e) number of demonstration areas established .....	4	
(f) number of exhibits arranged.....	54	
(g) miscellaneous .....	155	
Hours spent on forestry instruction .....		82
(a) University of Guelph .....	26	
(b) Western Ontario Agricultural School—Ridgetown .....	6	
(c) Kemptville Agricultural School.....	50	

# AGREEMENTS UNDER SECTION 2 OF THE FORESTRY ACT, AS OF MARCH 31, 1970

Agreement With	Date of Agreement	Acres Added (1969-70)	Total Acres
<i>Government of Canada</i>			
National Capital Commission .....	Aug. 16, 1961	—	3,632.00
<i>Conservation Authorities</i>			
Ausable River .....	Dec. 13, 1951	—	4,299.00
Big Creek Region .....	Dec. 2, 1954	75.00	3,841.40
Catfish Creek .....	Dec. 19, 1962	—	501.00
Central Lake Ontario .....	Sept. 24, 1963	—	195.00
Crowe Valley .....	Aug. 21, 1963	—	200.00
Ganaraska Region .....	Jan. 31, 1947	—	8,548.60
Grand River .....	Mar. 18, 1952	—	5,866.37
Hamilton Region .....	Oct. 19, 1962	—	12.50
Lakehead Region .....	May 15, 1958	—	1,256.70
Lower Thames Valley .....	Aug. 12, 1964	—	300.00
Maitland Valley .....	Apr. 1, 1955	—	949.00
Metropolitan Toronto and Region .....	Apr. 11, 1951	—	1,928.00
Moira River .....	Nov. 28, 1951	—	16,497.00
Napanee Valley .....	Oct. 28, 1954	—	6,666.00
Niagara Peninsula .....	June 6, 1963	—	186.00
North Grey Region .....	June 25, 1958	—	7,255.00
Otonabee Region .....	May 15, 1963	275.00	1,820.00
Otter Creek .....	Apr. 26, 1957	—	1,532.00
Sauble Valley .....	Sept. 29, 1959	—	3,816.00
Saugeen Valley .....	Dec. 15, 1952	309.00	13,573.00
South Nation River .....	Mar. 28, 1960	791.30	2,429.80
Sydenham Valley .....	July 13, 1965	—	150.00
Upper Thames River .....	Apr. 11, 1951	—	3,444.36
<i>Counties</i>			
Brant .....	Nov. 15, 1952	—	50.00
Bruce .....	Jan. 20, 1950	—	15,533.35
Dufferin .....	Nov. 26, 1930	—	2,405.00
Grey .....	Dec. 21, 1937	—	8,378.08
Halton .....	Mar. 14, 1950	—	1,498.63
Huron .....	Nov. 27, 1950	—	1,439.00
Kent .....	Dec. 23, 1953	—	75.39
Lanark .....	July 5, 1940	495.00	4,130.00
Leeds and Grenville .....	Apr. 24, 1940	959.00	11,176.00
Lennox and Addington .....	Apr. 3, 1952	—	1,186.00
Middlesex .....	Mar. 8, 1954	—	1,793.90
Northumberland and Durham .....	June 10, 1924	—	5,819.00
Ontario .....	July 9, 1930	700.00	4,641.00
Oxford .....	Sept. 1, 1950	—	716.56
Prescott and Russell .....	Mar. 15, 1937	502.87	25,252.93
Rentrew .....	Dec. 26, 1951	1,277.00	13,306.00

continued.

# AGREEMENTS UNDER SECTION 2 OF THE FORESTRY ACT, AS OF MARCH 31, 1970 (continued)

Agreement With	Date of Agreement	Acres Added 1969-70	Total Acres
Simcoe .....	June 19, 1925	437.00	21,582.74
Stormont, Dundas and Glengarry .....	Sept. 20, 1949	318.00	2,566.45
Victoria .....	Aug. 10, 1928	—	8,319.00
Waterloo .....	Apr. 17, 1950	—	710.48
Wellington .....	June 18, 1964	—	1,100.00
Wentworth .....	Nov. 27, 1952	—	989.30
York .....	Mar. 27, 1924	—	4,725.08
<i>Regional Municipalities</i>			
Ottawa-Carleton .....	July 30, 1964	150.00	830.00
<i>Townships</i>			
Bonfield .....	Apr. 1, 1952	—	60.00
Charlottenburgh .....	Apr. 1, 1955	—	175.00
Cramahe .....	Jan. 4, 1964	—	162.00
Cumberland .....	May 29, 1952	—	808.44
Darlington .....	Aug. 19, 1964	—	140.00
Galway and Cavendish .....	Nov. 1, 1952	—	619.00
Machar .....	Dec. 30, 1963	—	90.00
Marlborough .....	Nov. 21, 1953	—	200.00
Mosa .....	July 16, 1964	—	144.00
Torbolton .....	Mar. 28, 1953	—	430.80
Williamsburg .....	Oct. 19, 1962	—	400.00
<i>Summary</i>			
1 Government of Canada .....		—	3,632.00
23 Conservation Authorities .....		1,450.30	85,266.73
23 Counties .....		4,688.87	137,393.89
11 Townships .....		—	3,229.24
1 Regional Municipalities .....		150.00	830.00
59 Total .....		6,289.17	230,351.86



Three-month-old jack pine seedlings grown in perforated and solid plastic tubes. Photo by J. F. Robinson.



## DISTRIBUTION OF NURSERY STOCK AND CONTAINER STOCK, 1969-70

Species	*Nursery Stock						Container Stock Crown Lands	Total Trees	
	Private Lands		Crown Lands	Agreement Forests	Educa- tional or Scientific	Miscel- laneous			Sub-Total
	W T A	Other							
White Pine ....	1,190,875	830,080	5,016,194	213,800	1,325		7,252,274	717,400	7,969,674
Red Pine .....	3,238,750	949,250	2,239,237	588,800	1,775		7,017,812	2,113,800	9,131,612
Jack Pine .....	248,100	361,550	8,876,945	494,200	700		9,981,495	4,784,200	14,765,695
Scotch Pine ....	22,025	1,493,150	20,344		600	1,000,000	2,536,619		2,536,619
White Spruce ..	1,904,950	1,575,595	20,046,588	618,750	800		24,146,683	1,398,400	25,545,083
Black Spruce ..	1,200	137,775	11,002,167		1,000	3,000	11,145,142	3,319,500	14,464,642
Norway Spruce	79,200	346,851	41,380	200	25		467,656		467,656
Red Spruce ....		2,550	258,225	44,000			304,775		304,775
White Cedar ..	84,525	606,820	23,282	4,600			719,227		719,227
Red Cedar ....		190					190		190
European Larch	56,825	98,125	5,225	61,000			221,175		221,175
Tamarack .....	45,225	23,450	103	100			68,878		68,878
White Ash ....	20,125	87,666	15,194	8,700	380		132,065		132,065
Red Oak .....	20,850	101,447	7,810	10,100	250		140,457		140,457
Silver Maple ..	62,575	159,700	51,878	42,604	175		316,932		316,932
Carolina Poplar	33,775	263,520	31,734	5,425	550		335,004		335,004
Black Locust ..	19,975	87,225	225	8,000	100		115,525		115,525
Black Walnut ..	33,400	21,675	650	1,700	30		57,455		57,455
Other.....	11,750	26,220	44,000	18,850	180		101,000		101,000
TOTAL .....	7,074,125	7,172,839	47,681,681	2,120,829	7,890	1,003,000	65,060,364	12,333,300	77,393,664

\*Includes nursery stock furnished to all provincial government departments and 2,563,600 trees purchased from Kimberly-Clark Pulp and Paper Company Limited and Spruce Falls Power and Paper Company Limited under Regeneration Agreements with the Province of Ontario

## DISTRIBUTION OF NURSERY STOCK FROM DEPARTMENT TREE NURSERIES

Year ending March 31	Private Land	Crown Land Agreement Forests	Other	Total Trees
1961 .....	13,708,050	35,630,393	494,969	49,833,412
1962 .....	11,505,775	31,666,580	22,508	43,194,863
1963 .....	9,597,300	33,958,451	212,165	43,767,916
1964 .....	9,016,400	34,752,240	154,045	43,922,685
1965 .....	10,791,980	38,551,572	140,516	49,484,068
1966 .....	11,312,900	34,481,899	3,225,055	49,019,854
1967 .....	9,542,325	41,839,242	330,894	51,712,461
1968 .....	10,219,517	44,248,398	337,255	54,805,170
1969 .....	11,956,165	40,183,862	17,123	52,157,150
1970 .....	14,246,964	47,365,642	1,010,890	62,623,496

# FOREST ECONOMICS UNIT

Throughout the 1969-70 fiscal year, Canada's economic activity was subject to a series of interrelated phenomena. The rapid economic growth which had begun in the first quarter of 1961 had by this period evolved into spiralling inflation. Stringent anti-inflationary actions of the federal government resulted in tight-money conditions and brought about a general decline of the nation's economic activity. The most prevalent indicators of this occurrence were the significant decrease in housing starts and a decline of activity in the construction sector.

These conditions were to have substantial implications for the forest industry, as indicated by the selling price indexes for the following industry components.

INDUSTRY SELLING PRICE INDEXES.\*

	Veneer, Plywood Mills	Sawmills	Pulp, Paper Mills
1969—April .....	145.4	168.2	113.2
May .....	150.4	160.1	113.3
June .....	150.5	145.7	113.6
July .....	140.3	138.5	114.5
August .....	140.5	132.3	114.3
September .....	140.0	130.4	114.4
October .....	133.5	127.7	114.6
November .....	133.4	128.8	114.1
December .....	130.4	128.9	113.9
1970—January .....	130.7	124.0	118.2
February .....	127.0	123.4	118.4
March .....	123.8	122.7	118.6

\*Source: D.B.S., Prices and Price Indexes.

Veneer and plywood prices experienced a significant decline beginning in the second quarter of 1969 and continuing throughout the fiscal year. Lumber and lumber product prices (with the exception of hardwood prices which held relatively constant) dropped in a manner not paralleled by this commodity during the past decade. This event was the main contributing factor to a few temporary mill closures and several slowdowns in the Ontario softwood lumber industry.

In contrast, pulp and paper prices continued to hold steady. In effect, the demand-supply situation was favour-

able enough for the pulp and paper industry to again procure a price increase in spite of highly depressed market conditions in other segments of the forest industry.

The 1969 production of Ontario sawmills indicated that hardwood lumber production increased by three per cent over the previous year, whereas the softwood production advanced less than one per cent irrespective of a significantly increased production capacity.

Utilization of sawmill residues for the production of pulp chips continued to increase as the 700,000 bone-dry ton/year level was surpassed.

The Unit's activities during the fiscal year were to a significant degree centred on two major projects; one being the design and execution of a survey to determine rural private landowner characteristics and objectives in southern Ontario; and the other taking the form of a Christmas tree consumer survey in Metropolitan Toronto.

The rural private landowner survey was conducted through a mail questionnaire during the summer of 1969 in the eight southern administrative districts of the Department. Five per cent of all landowners, with more than fifty acres of rural property, were included in the sample. More than fifty per cent of the questionnaires were returned, and 3,963 of them were analyzed with the assistance of electronic data-processing equipment.

The purpose of the survey was to determine the general socio-economic characteristics of the rural landowners, their objectives of ownership, and attitudes toward woodland management. Certain other measures, such as the availability of timber, interest in reforestation, and recreation, were also obtained.

The survey indicates that 59 per cent of the landowners are farmers; yet three-quarters of the owners grew up primarily in rural areas. The implication is that farmers are more often turning to non-farm occupations.

On the other hand, the non-residents comprise only 14 per cent of the total owners of larger rural properties. They, however, did account for 38 per cent of the total land acquisitions since 1964 and are gaining in prominence.

The rural residents and non-resident landowners reflect different ownership objectives. The farmer or rural non-farm landowner still rates timber production for commercial or personal consumption as a frequent objective of woodland ownership, whereas many of the non-residents have other goals, such as aesthetics or recreation, in mind. While only five landowners in every twenty expressed an interest in having a portion of their property reforested,

## ONTARIO-PRODUCED PULP CHIPS, 1969

	Northwestern Region*	Northeastern Region*	Southern Region*	Quebec	U.S.A.
Production					
No. of producing mills .....	13	37	25	—	—
Quantity (bone-dry tons) .....	219,752	318,583	161,920	—	—
Percentages of total .....	31.4%	45.5%	23.1%	—	—
Consumption					
No. of consuming mills .....	4	6	3	5	5
Quantity (bone-dry tons) .....	342,569	220,394	29,552	88,260	19,480
Percentages of total .....	48.4%	31.5%	4.2%	12.6%	2.8%

\*Department's Administrative Regions.

sixteen out of every twenty owners were not familiar with The Woodlands Improvement Act assistance program.

During the December holiday season, a telephone survey of the Metropolitan Toronto Christmas tree market was conducted in co-operation with the Ontario Christmas Tree Growers Association. The essential objective of the survey was to determine the impact of the artificial tree on the natural tree market, and was designed to correlate the various socio-economic characteristics of the tree consumer with his tree purchasing behaviour.

This market was found to be composed of households such that 28 per cent did not have a tree of any type, 33 per cent had artificial trees, and 39 per cent had natural trees. In addition to providing the specific details relating to that product's market size, economic prospects and future outlook, the survey provided considerable experience and insight into the practical aspects of survey design and consumer acceptance.

In addition to the special studies described, the Unit was primarily occupied in collecting and analyzing information and statistics as pertaining to the production, transportation and marketing of timber. In this endeavour, activities included statistical analysis, the conduction of various feasibility studies, the promotion of industrial activity, and the provision of advice and information available to Timber Branch, other government departments, and private firms or individuals.

## LICENSING OF MILLS

Mills licensed under The Crown Timber Act are distributed as shown in the following table. The trend toward fewer mills continues.

Licensed Mills	1967	1968	1969
SAWMILLS:			
Lumber capacity over 50 M fbm .....	28	27	31
Lumber capacity 10 to 50 M fbm .....	100	101	92
Lumber capacity under 10 M fbm ....	644	593	596
Miscellaneous sawn products .....	96	99	96
VENEER MILLS .....	29	29	30
PULP MILLS .....	25	25	24
Total .....	922	874	869

## TIMBER SALES SECTION FOREST RESOURCES INVENTORY UNIT

Aerial Photography was completed on 19,700 square miles, covering parts of the Forest Districts of Parry Sound, Pembroke, Lindsay, North Bay, Tweed, Kemptville and Lake Simcoe. In the re-inventory program, field work was carried out on 9,400 square miles in the Sioux Lookout District.

Forest Stand maps and tabulated inventory data were completed on 10,310 square miles and covered the Dryden, Red Lake and the Sioux Lookout Crown Management Units. The co-operative forest inventories were extended to include areas under licence for the Dryden Paper Co. Ltd., Lac Seul Land & Lumber Ltd. and the Ontario-Minnesota Pulp



Co. Ltd. (Seine River Conc.). The Multiplex machine was used to plot the contour and form lines of three Provincial Parks covering an area of 9,097 acres.

The photo processing unit produced 143,092 contact prints, 2,027 mosaics, 5,402 enlargements, 547 diapositives, 749 copy negatives and 2,991 square feet of repropositives.

GROSS VALUE OF PHOTO PROCESSING PRODUCTION

Year	Cash Receipts	Department Work	Total
1966-67 .....	\$56,754.20	\$31,296.58	\$ 88,050.78
1967-68 .....	53,270.95	30,842.42	84,113.37
1968-69 .....	63,451.15	51,258.79	114,709.94
1969-70 .....	79,280.06	53,496.76	132,786.82

MANAGEMENT PLANNING UNIT

The development of forest areas is based on management plans that provide detailed information about the volume of annual cut, cutting methods, regeneration treatments, road and camp locations, and other facts essential to orderly management.

Standard management plans are based on inventory data gathered using photo interpretation, point sampling, and computer compilation methods. The information is entered in stand ledgers, which also serve as a record of changes. Standard plans have been prepared following the re-inventory of Crown management units started in 1958. The essentials of this type of planning are contained in the Manual of Management Plan Requirements.

The initial management plans, based on the inventory method used prior to 1958, are retained until replaced with standard plans, and form the basis for the management of a large proportion of the Crown management units in the Province.

Management plans form a framework into which operating plans are fitted. An operating plan shows in detail the stands to be cut, regenerated, and tended, and the roads to be built and other improvements to be made to carry out operations on the management units.

1. *Crown Management Units.* The plans for these units are prepared by Department staff. There are 79 Crown management units comprising an area of 94,644 square miles with 70 management plans:

27 standard management plans in force ...	18,537 sq. mi.
13 plans being processed for Ministerial approval .....	9,255 sq. mi.
30 initial management or operating plans in force .....	59,797 sq. mi.
9 management units not under plans .....	7,055 sq. mi.

2. *Company Management Units.* The Management plans for Company Management Units are prepared by the licensees. There are 57 company units with 93,613 square miles under licence to 38 companies. The status of management planning for these units are as follows:

50 approved management plans .....	85,792 sq. mi.
4 plans being processed for Ministerial approval .....	2,734 sq. mi.
3 plans being revised or prepared .....	5,087 sq. mi.

3. *Agreement Forest Units.* The management plans for these units are prepared by Department staff. There are 60 units covering approximately 360 square miles (or 230,352 acres) with 60 management plans. The status of management planning is as follows:

18 approved plans .....	80,751 acres
13 plans being processed for approval .....	32,252 acres
12 plans in process of preparation .....	45,074 acres
17 units on annual plans and land acquired since 1960 to 1962 inventory .....	72,275 acres

ACCESS ROADS

A total of 105.6 miles of new roads was constructed, and 106.7 miles of existing roads were improved during the fiscal year. Road work was carried out under two categories.

1. *Logging Access Roads* are primarily designed for the extraction of timber products. The costs of the road are recovered over a five-year period through an increase in stumpage rates on the timber which has been made accessible. Some 16.4 miles of new roads were built, and 9.3 miles were improved.

CROWN TIMBER SALES, 1969-70

	Square Miles
New Licences issued under Section 2 C.T.A. ....	11.6
New Licences issued under Section 3 C.T.A. ....	6,247.4
New Licences issued under Section 5 C.T.A. ....	41.8
TOTAL .....	6,300.8
Abandonments: Licensed areas in the amount of 9,688.5 square miles were abandoned.	

## AREAS UNDER CROWN TIMBER LICENCE

Areas in square miles, March 31

Year	Licences under Section 2 C T A	Licences under Section 3 C T A	Licences under Section 5 C.T.A.	Total Area
1966 .....	2,466.7	100,362.8	1.2	102,830.7
1967 .....	2,006.5	104,269.9	nil	106,276.4
1968 .....	1,704.2	104,134.6	74.0	105,912.8
1969 .....	1,664.7	101,924.3	74.0	103,663.0
1970 .....	1,497.6	98,661.9	115.8	100,275.3

2. *Forest Access Roads* are built for a variety of purposes such as timber extraction, forest improvement, forest protection, hunting and fishing research, and other forest uses. Under this category, 89.2 miles of new roads were built, and 97.4 miles were improved.

## SCALING

Scaling is carried out in the Province to determine quantities of wood cut from Crown lands for revenue, for forest management, and for statistical analysis of economic conditions and trends in the wood-using industries.

Continual attention to the fast-changing techniques of cutting and moving wood from the stump to the mill has encouraged and brought about new concepts of wood measurement. These resultant changes have, as well, been directed towards speeding up and simplifying scaling operations at a minimum cost, while retaining control over the movement of wood. The most promising of the new wood measurement methods are tree-length scaling, weight scaling, and sample scaling.

Computer analysis of scaling data and preparation of Crown dues accounts is now effective across the Province and is the basis of a monthly billing system.

*Scaling examinations* were held at the following locations on the dates noted: Huntsville, May 1-2, 1969; North Bay, May 30, 1969; and North Bay, September 26, 1969. A total of 90 new scalers were licensed at the three courses, and 339 licences were renewed for a three-year period.

## VOLUME AND VALUE OF WOOD CUT FROM AGREEMENT FORESTS, 1969-70

	Volume	Value
Sawlogs (cu. ft.) .....	160,541.04	\$24,034.28
Poles, Posts (cu. ft.) .....	5,995.48	2,350.31
Pulpwood (cords) .....	20,605.31	56,159.43
Fuelwood (cords) .....	319.53	1,717.66
Miscellaneous .....	—	3,744.60
Total, all Products .....	1,945,147.92*	\$88,006.28

\*Equivalent cu. ft.

## SUMMARY OF VOLUME AND VALUE OF WOOD CUT FROM CROWN LAND, 1969-70

Species	Volume Cu. Ft.	Stumpage Value
<i>Softwoods</i>		
White Pine .....	14,290,115.14	\$ 1,010,896.35
Red Pine .....	4,570,859.63	330,552.42
Jack Pine .....	121,391,036.86	3,183,218.75
Spruce .....	221,447,572.81	8,240,960.62
Hemlock .....	2,251,047.47	66,570.81
Balsam .....	13,676,874.63	299,519.65
Cedar .....	184,800.95	7,053.85
Tamarack .....	22,061.91	660.60
Conifers .....	180,820.12	3,521.16
Fuelwood .....	134,426.65	899.23
Christmas Trees .....	41,466.50	4,130.45
Total .....	378,191,082.67	\$13,147,983.89
<i>Hardwoods</i>		
Maple .....	5,235,236.02	322,121.03
Yellow Birch .....	4,587,945.36	478,425.99
White Birch .....	2,241,421.16	46,659.58
Oak .....	311,279.40	17,664.70
Beech .....	331,534.41	11,398.83
Ash .....	52,803.11	2,289.40
Elm .....	170,138.86	8,704.23
Basswood .....	324,598.24	24,250.67
Butternut .....	464.86	24.87
Cherry .....	20,576.60	844.67
Poplar .....	24,993,861.55	249,099.78
Hardwood .....	13,475,034.76	114,352.63
Fuelwood .....	413,659.30	4,140.33
Total .....	52,158,553.63	\$ 1,279,976.71
Grand Total .....	430,349,636.30	\$14,427,960.60

# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1968-9

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
<b>CORDAGE</b>					
Pulpwood Rough	White Pine .....		15,936.28Cords	1,354,583.80	27,083.24
	Red Pine .....		2,997.08	254,751.80	7,473.19
	Jack Pine .....		355,120.13	30,185,211.90	776,281.23
	Pine-all .....		190.79	16,217.15	269.28
	Spruce .....		891,466.89	75,771,980.10	2,899,903.79
	Hemlock .....		1,784.85	151,712.25	3,234.54
	Balsam .....		51,707.28	4,395,118.80	93,896.95
	Cedar .....		508.70	43,239.50	1,059.41
	Tamarack .....		338.07	28,735.95	572.78
	Conifers .....		13.93	1,184.05	19.50
	Maple .....		7,312.27	621,542.95	6,129.35
	Yellow Birch .....		191.78	16,301.30	202.84
	White Birch .....		11,003.60	935,306.00	19,626.04
	Oak .....		11.22	953.70	11.68
	Beech .....		9.41	799.85	7.06
	Ash .....		6.65	565.25	8.32
	Elm .....		21.00	1,785.00	21.00
	Poplar .....		117,270.99	9,968,034.15	96,082.09
	Hardwood .....		53,956.90	4,586,336.50	49,281.83
	Total .....		1,509,847.82	128,334,360.00	3,981,164.12
Pulpwood Peeled	Jack Pine .....		1,694.70	168,159.60	4,143.27
	Spruce .....		6,803.65	679,738.75	24,926.65
	Balsam .....		120.20	12,020.00	205.63
	Tamarack .....		.05	5.00	.08
	White Birch .....		.60	60.00	.54
	Poplar .....		9,825.81	974,827.20	8,135.14
	Hardwood .....		848.78	74,066.75	830.82
	Total .....		19,293.79	1,908,877.30	38,242.13
Veneer Bolts	Jack Pine .....		57.69	4,903.65	121.17
	Spruce .....		308.72	26,241.20	975.17
	Balsam .....		7.28	618.80	13.71
	White Birch .....		4,279.12	363,725.20	6,131.91
	Poplar .....		15,528.12	1,319,890.20	13,051.10
	Total .....		20,180.93	1,715,379.05	20,293.06
Fuelwood	Jack Pine .....		137.17	11,659.45	78.84
	Spruce .....		19.59	1,665.15	9.80
	Balsam .....		67.73	5,757.05	33.87
	Softwood .....		2,771.82	235,604.70	2,034.14
	White Birch .....		26.65	2,265.25	84.22
	Hardwood .....		4,572.00	388,620.00	4,018.63
	Total .....		7,594.96	645,571.60	6,259.50
Total Cordage .....			1,556,917.50	132,604,187.95	4,045,958.81



# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1968-9 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
LOGS, LONG TIMBERS					
Pulp Logs	White Pine .....	398,663	721,389.31 Cu Ft.	721,389.31	11,955.30
	Red Pine .....	1,513	7,425.64	7,425.64	253.19
	Jack Pine .....	3,327,442	13,514,846.57	13,514,846.57	336,688.03
	Spruce .....	7,328,314	24,410,143.66	24,410,143.66	889,410.43
	Hemlock .....	308	1,258.86	1,258.86	20.77
	Balsam .....	471,830	1,810,547.60	1,810,547.60	33,580.81
	Tamarack .....	4,480	13,374.00	13,374.00	346.46
	Conifers .....	36,300	81,698.60	81,698.60	1,348.01
	Maple .....	5,376	37,475.36	37,475.36	226.20
	Yellow Birch .....	4	28.20	28.20	.33
	White Birch .....	1,687	8,802.84	8,802.84	88.56
	Beech .....	5	13.23	13.23	.14
	Ash .....	50	121.45	121.45	1.23
	Elm .....	25	54.66	54.66	.55
	Basswood .....	73	219.48	219.48	2.19
	Poplar .....	26,849	86,601.49	86,601.49	1,015.01
	Hardwood .....	475,188	1,327,598.27	1,327,598.27	11,112.97
	Total .....	12,078,107	42,021,599.22	42,021,599.22	1,286,050.18
Sawlogs— Cubic Feet	White Pine .....	120,131	1,369,833.87	1,369,833.87	85,411.87
	Red Pine .....	136,531	1,203,511.16	1,203,511.16	74,531.19
	Jack Pine .....	3,223,535	16,882,617.50	16,882,617.50	497,946.97
	Spruce .....	3,412,986	17,274,272.52	17,274,272.52	683,725.52
	Hemlock .....	67	7,479.54	7,479.54	313.29
	Balsam .....	227,030	1,315,961.80	1,315,961.80	29,403.18
	Cedar .....	1,331	85,010.02	85,010.02	1,806.00
	Tamarack .....	430	1,045.04	1,045.04	36.84
	Maple .....	20	36,890.25	36,890.25	2,165.07
	Yellow Birch .....	229	83,244.26	83,244.26	2,992.71
	White Birch .....	54,886	440,380.47	440,380.47	8,133.20
	Oak .....		1,425.44	1,425.44	71.28
	Ash .....	1,099	67,164.55	67,164.55	432.78
	Elm .....		32,909.30	32,909.30	228.67
	Poplar .....	385,571	4,762,669.60	4,762,669.60	52,772.55
	Hardwood .....		294.50	294.50	8.84
	Total .....	7,563,846	43,564,709.82	43,564,709.82	1,439,979.96
Veneer Logs— Cubic Feet	White Pine .....	88	785.12	785.12	27.79
	Jack Pine .....	288	1,726.58	1,726.58	46.51
	Spruce .....	47,374	342,692.64	342,692.64	12,254.88
	Yellow Birch .....	5,479	51,880.12	51,880.12	622.58
	White Birch .....	51,319	291,046.28	291,046.28	4,429.81
	Poplar .....	428,942	2,944,653.00	2,944,653.00	40,590.07
	Total .....	533,490	3,632,783.74	3,632,783.74	57,971.64

# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1968-9 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
<b>LOGS, LONG TIMBERS (continued)</b>					
Long Timber	White Pine .....	1,329	17,743.70	17,743.70	1,738.69
	Red Pine .....	25,027	597,211.48	597,211.48	70,553.11
	Jack Pine .....	15,495	267,530.14	267,530.14	17,308.66
	Spruce .....	27,754	135,315.95	135,315.95	8,732.22
	Hemlock .....	2,753	67,700.46	67,700.46	3,629.17
	Balsam .....	765	1,676.26	1,676.26	77.96
	Cedar .....	603	3,007.17	3,007.17	131.11
	Tamarack .....	61	869.24	869.24	34.95
	Conifers .....	305	7,737.80	7,737.80	630.13
	Maple .....	43	956.55	956.55	61.29
	Yellow Birch .....	18	529.43	529.43	23.88
	White Birch .....	2,485	4,739.67	4,739.67	249.57
	Beech .....	-	163.49	163.49	8.33
	Ash .....	1	15.82	15.82	.06
	Elm .....	9	233.47	233.47	2.94
	Basswood .....	1	74.18	74.18	5.93
	Poplar .....	2,667	6,272.56	6,272.56	314.46
	Total .....	79,323	1,111,777.37	1,111,777.37	103,502.46
Sawlogs—MBM	White Pine .....	1,124,471	89,922.32	13,228,591.55	1,079,579.97
	Red Pine .....	259,966	15,558.81	2,367,528.40	173,276.35
	Jack Pine .....	170,472	4,402.10	746,183.43	23,787.20
	White Spruce .....	340	24.40	3,580.17	280.62
	Spruce .....	286,277	12,227.64	1,932,114.45	107,046.14
	Hemlock .....	186,014	13,253.73	1,960,779.59	58,879.86
	Balsam .....	13,612	317.15	55,959.32	3,021.27
	Cedar .....	4,983	135.94	23,861.65	1,009.06
	Tamarack .....	679	26.99	4,600.22	179.84
	Maple .....	447,759	33,021.05	4,931,675.62	287,886.53
	Yellow Birch .....	532,503	38,296.30	5,516,333.91	608,998.88
	White Birch .....	122,586	5,973.21	917,075.39	41,409.26
	Oak .....	27,855	1,566.01	245,948.50	14,647.40
	Beech .....	23,257	1,422.22	221,004.08	6,487.64
	Ash .....	5,172	275.98	44,018.74	2,558.70
	Elm .....	10,609	1,001.38	152,187.86	7,886.21
	Basswood .....	40,237	2,299.40	359,069.22	25,956.42
	Butternut .....	64	3.13	516.64	30.46
	Cherry .....	1,661	94.10	14,180.88	684.98
	Poplar .....	150,387	7,637.69	1,207,283.14	27,122.73
	Total .....	3,408,904	227,459.55	33,932,492.76	2,470,729.52
	Total Logs, Long Timber .....	23,663,670	90,558,329.70	124,263,362.91	5,358,233.76

# SUMMARY

SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1968-9 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
TREE LENGTH MATERIAL					
	White Pine .....	66	1,221.79 Cu. Ft.	1,221.79	80.64
	Red Pine .....	280	5,633.92	5,633.92	371.84
	Jack Pine .....	4,268,468	45,022,308.03	45,022,308.03	1,177,144.67
	White Spruce .....	102,193	1,754,527.55	1,754,527.55	60,827.70
	Black Spruce .....	1,930,622	10,328,669.73	10,328,669.73	357,435.65
	Spruce .....	9,686,905	61,702,634.86	61,702,634.86	2,267,286.84
	Balsam .....	655,843	4,321,102.97	4,321,102.97	84,842.03
	Cedar .....	40	1,769.06	1,769.06	35.38
	Tamarack .....	20	201.72	201.72	4.03
	Poplar .....	8,731	232,277.86	232,277.86	1,635.85
	White Pine .....	425	77.96 MBM	15,771.16	622.15
	Red Pine .....	206	22.59	4,348.79	184.89
	Jack Pine .....	719,147	24,099.63	5,247,281.58	92,537.79
	Spruce .....	650,698	18,491.56	3,709,496.95	111,854.57
	Balsam .....	26,720	918.61	172,049.84	5,511.66
	Cedar .....	13	43	80.97	2.15
	White Birch .....	4	.21	39.92	.32
	Total .....	18,050,381		132,519,416.70	4,160,378.16

## MISCELLANEOUS

Mining Timbers	Jack Pine .....	74	90.97	7,732.45	272.91
Cu. Ft.	Spruce .....	17	26.30	2,235.50	89.19
	Conifers .....		87.00	7,395.00	87.00
	White Birch .....	56	196.74	16,722.90	98.38
	Hardwood .....		132.00	11,220.00	132.00
	Jack Pine .....	1,443	4,056.25	4,056.25	139.95
	Black Spruce .....	126	463.92	463.92	19.11
	Spruce .....	11,111	43,114.44	43,114.44	2,070.12
	White Birch .....	250	1,173.51	1,173.51	15.26
	Poplar .....		1,749.48	1,749.48	53.20
	Hardwood .....	3,000	53.55	53.55	60.00
Poker Poles (cords)	Hardwood .....		756.92	64,338.20	1,135.38
Posts (Lin. Ft.)	Cedar .....	29,287	220,566.00	44,113.20	3,058.37
	Tamarack .....	225	1,800.00	360.00	36.00
Christmas Trees	Spruce .....	93,495	93,495.00	46,747.00	4,719.75



# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1968-9 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
<b>MISCELLANEOUS (continued)</b>					
Other	White Pine .....		609,048.36	662,797.38	46,584.34
	Red Pine .....		128,742.21	131,521.77	10,120.66
	Jack Pine .....		672,665.93	2,114,108.33	58,633.87
	White Spruce .....		6,426.82	6,426.82	385.61
	Black Spruce .....		24,421.45	24,421.45	1,465.29
	Spruce .....		601,124.71	834,087.79	28,526.61
	Hemlock .....		161,495.33	166,482.53	6,726.94
	Balsam .....		128,970.35	140,511.93	3,429.65
	Cedar .....		54,417.57	54,417.57	1,448.99
	Tamarack .....		11,200.40	11,926.50	476.36
	Maple .....		331,290.73	334,354.45	17,864.34
	Yellow Birch .....		111,231.79	111,231.79	9,237.59
	White Birch .....		440,083.66	450,740.64	10,393.42
	Oak .....		72,649.36	83,015.29	4,744.88
	Beech .....		33,562.22	33,562.22	1,006.87
	Ash .....		12,943.98	13,096.62	659.46
	Elm .....		11,416.01	11,416.01	570.80
	Basswood .....		32,937.09	33,119.66	2,654.49
	Poplar .....		998,464.51	1,031,043.52	25,544.71
	Hardwood .....		124,276.73	249,739.97	2,301.39
Total .....		139,084		6,749,497.64	244,762.89

<b>GRAND TOTAL .....</b>	<b>41,853,135</b>	<b>396,136,465.20</b>	<b>13,809,333.62</b>
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Number of District Cutting Licences issued and included in above: 2459	940,169.00
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Conversion factors: 1 cubic foot = 5.35 board feet      1 cord = 85 cubic feet

# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1969-70

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
<b>CORDAGE</b>					
Pulpwood Rough	White Pine .....		4,698.27	399,352.95	12,758.26
	Red Pine .....		5,383.17	457,569.45	12,180.94
	Jack Pine .....		387,036.36	32,900,090.60	861,767.80
	Pine .....		120.58	10,249.30	177.53
	All Spruce .....		950,220.82	80,769,047.65	3,137,802.38
	Hemlock .....		5,248.36	446,110.60	8,252.62
	Balsam .....		64,548.60	5,487,081.60	127,701.15
	Cedar .....		447.31	38,021.35	875.01
	Tamarack .....		44.49	3,781.65	73.85
	Conifers .....		823.90	70,031.50	1,208.93
	Maple .....		1,486.25	126,331.25	1,130.92
	Yellow Birch .....		168.77	14,345.45	126.47
	White Birch .....		10,610.93	901,929.05	10,315.58
	Oak .....		21.24	1,805.40	20.61
	Beech .....		30.46	2,589.10	22.85
	Black Ash .....		0.90	76.50	2.68
	Ash .....		7.38	627.30	6.85
	Elm .....		17.27	1,467.95	19.81
	Black Cherry .....		5.00	425.00	5.00
	Poplar .....		167,278.20	14,232,088.65	114,006.91
	Hardwoods .....		55,211.91	4,693,012.50	50,210.54
	Total .....		1,653,410.17	140,556,034.80	4,338,666.69
Pulpwood Peeled	Jack Pine .....		1,462.30	145,660.15	3,602.55
	All Spruce .....		16,175.76	1,615,172.40	58,221.00
	Balsam .....		51.46	4,714.60	103.31
	White Birch .....		21.68	2,168.00	18.95
	Poplar .....		6,477.27	627,975.45	6,092.42
	Hardwoods .....		637.87	54,680.65	557.57
	Total .....		24,826.34	2,450,371.25	68,595.80
Veneer Bolts	Jack Pine .....		72.01	6,120.85	151.23
	All Spruce .....		1,240.42	105,435.70	4,227.03
	Balsam .....		57.27	4,867.95	108.83
	White Birch .....		1,140.40	96,934.00	1,168.46
	Poplar .....		24,557.48	2,087,385.80	17,165.34
	Total .....		27,067.58	2,300,744.30	22,820.89
Fuelwood	Jack Pine .....		518.15	44,042.75	259.13
	Conifers .....		1,063.34	90,383.90	640.10
	Hardwoods .....		4,866.58	413,659.30	4,140.33
	Total .....		6,448.07	548,085.95	5,039.56
	Total Cordage .....		1,711,752.16	145,855,236.30	4,435,122.94

# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1969-70 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
<b>LOGS, LONG TIMBERS</b>					
Pulp Logs	White Pine .....	136,695	477,935.91	477,935.91	7,903.18
	Red Pine .....	1,311	4,629.89	4,629.89	124.82
	Jack Pine .....	3,867,021	15,287,260.08	15,287,260.08	378,167.42
	All Spruce .....	7,695,564	25,022,067.46	25,022,067.46	917,729.33
	Hemlock .....	4,957	36,453.28	36,453.28	601.95
	Balsam .....	597,857	2,054,050.35	2,054,050.35	39,345.01
	Cedar .....	1,454	3,820.00	3,820.00	63.62
	Tamarack .....	2,927	7,658.46	7,658.46	197.83
	Conifers .....	53,151	104,719.52	104,719.52	1,757.83
	White Birch .....		7,796.86	7,796.86	92.68
	Poplar .....		56,843.89	56,843.89	670.01
	Hardwoods .....	10,398	141,708.45	141,708.45	973.78
	<b>Total .....</b>	<b>12,371,335</b>	<b>43,204,944.15</b>	<b>43,204,944.15</b>	<b>1,347,627.46</b>
Sawlogs (Cu. Ft.)	White Pine .....	158,657	1,761,219.52	1,761,219.52	108,738.32
	Red Pine .....	130,873	1,033,611.29	1,033,611.29	69,407.89
	Jack Pine .....	2,867,389	13,564,224.68	13,564,224.68	415,088.48
	Pine .....	6,206	22,727.92	22,727.92	759.67
	All Spruce .....	3,632,788	17,824,951.47	17,824,951.47	663,444.05
	Hemlock .....	155	2,322.22	2,322.22	76.51
	Balsam .....	355,686	1,527,993.92	1,527,993.92	36,563.15
	Cedar .....	5,984	36,090.06	36,090.06	1,268.24
	Tamarack .....	1,620	8,098.16	8,098.16	293.02
	Maple .....	20	6,272.45	6,272.45	47.19
	Yellow Birch .....	1,474	12,787.96	12,787.96	86.02
	White Birch .....	49,073	306,837.39	306,837.39	4,956.40
	Oak .....	64	1,067.57	1,067.57	39.82
	Black Ash .....	11	2,200.11	2,200.11	28.13
	Ash .....	1,682	10,550.44	10,550.44	107.29
	Elm .....		2,067.22	2,067.22	12.41
	Basswood .....	22	153.99	153.99	12.31
	Black Cherry .....		1,646.96	1,646.96	9.88
	Poplar .....	464,437	3,162,190.01	3,162,190.01	38,389.33
	Hardwoods .....	67,332	245,891.95	245,891.95	2,147.96
	<b>Total .....</b>	<b>7,743,473</b>	<b>39,532,905.29</b>	<b>39,532,905.29</b>	<b>1,341,476.07</b>
Veneer Logs	White Pine .....	89	857.64	857.64	30.36
	Jack Pine .....	13	78.39	78.39	2.90
	All Spruce .....	74,148	503,466.70	503,466.70	18,215.77
	Yellow Birch .....	49	345.81	345.81	4.15
	White Birch .....	41,920	220,190.53	220,190.53	4,041.33
	Poplar .....	510,866	3,446,459.64	3,446,459.64	43,616.90
	<b>Total .....</b>	<b>627,085</b>	<b>4,171,398.71</b>	<b>4,171,398.71</b>	<b>65,911.41</b>



# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1969-70 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
LOGS, LONG TIMBERS (continued)					
Long Timber	White Pine .....	505	14,002.11	14,002.11	1,266.84
	Red Pine .....	25,589	615,874.87	615,874.87	68,971.00
	Jack Pine .....	7,919	131,459.24	131,459.24	7,162.91
	All Spruce .....	17,455	75,240.11	75,240.11	5,020.40
	Hemlock .....	747	20,430.54	20,430.54	1,137.43
	Balsam .....	198	757.85	757.85	41.61
	Cedar .....	371	3,202.97	3,202.97	161.82
	Tamarack .....	41	62.00	62.00	3.08
	Conifers .....	249	6,069.10	6,069.10	554.40
	White Birch .....	1	23.97	23.97	1.68
	Oak .....	3	56.55	56.55	3.39
Total .....		53,078	867,179.31	867,179.31	84,324.56
Sawlogs MBM	White Pine .....	949,315	76,506.71	11,268,235.33	866,279.85
	Red Pine .....	279,206	16,125.18	2,441,678.49	179,176.54
	Jack Pine .....	101,382	2,711.67	460,950.99	16,516.61
	White Spruce .....	89	5.78	861.14	66.50
	All Spruce .....	272,149	12,034.70	1,910,519.64	107,093.70
	Hemlock .....	179,054	11,808.43	1,745,730.83	56,502.30
	Balsam .....	11,004	559.16	102,192.33	4,619.70
	Cedar .....	7,192	276.86	49,890.94	1,772.41
	Tamarack .....	423	13.27	2,371.83	91.02
	Maple .....	477,587	34,277.59	5,102,632.32	320,942.92
	Yellow Birch .....	433,667	31,771.75	4,560,466.14	478,209.35
	White Birch .....	91,479	4,571.57	700,424.08	26,032.83
	Oak .....	35,041	1,960.02	308,349.88	17,600.88
	Beech .....	38,669	2,158.85	328,945.31	11,375.98
	Ash .....	5,048	244.78	39,348.76	2,144.45
	Elm .....	12,098	1,095.27	166,603.69	8,672.01
	Basswood .....	40,010	2,010.58	324,444.25	24,238.36
	Butternut .....	41	2.49	464.86	24.87
	Black Cherry .....	2,082	124.38	18,504.64	829.79
	Poplar .....	145,827	7,532.20	1,209,338.49	27,955.14
Total .....		3,081,363	205,791.24	30,741,953.94	2,150,145.21
Total Logs, Long Timbers .....		23,876,334	87,982,218.70	118,518,381.40	4,989,484.71

## TREE LENGTH MATERIAL

White Pine .....	9,440	364,660.59 Cu. Ft.	364,660.59	13,756.91
Red Pine .....	466	13,975.71	13,975.71	552.59
Jack Pine .....	5,093,881	54,479,185.99	54,479,185.99	1,411,802.28
White Spruce .....	93,980	1,632,111.35	1,632,111.35	56,633.82
Black Spruce .....	2,434,096	11,936,325.73	11,936,329.13	414,190.51
All Spruce .....	12,016,205	76,748,120.80	76,848,084.30	2,758,619.53
Balsam .....	690,651	4,277,209.28	4,274,120.20	83,940.52

# SUMMARY

## SUMMARY OF VOLUME AND VALUE OF TIMBER CUT ON CROWN LAND, 1969-70 (continued)

Class	Species	Pieces	Volume	Equivalent Cubic Feet	Stumpage \$
TREE LENGTH MATERIAL (continued)					
	Cedar.....	453	3,492.69	3,492.69	99.85
	Tamarack .....	17	89.81	89.81	1.80
	White Birch.....	268	1,946.78	1,946.78	13.02
	Poplar .....	9,096	171,579.62	171,579.62	1,203.73
	White Pine .....	84	18.91 MBM	3,532.09	137.11
	Red Pine .....	129	18.58	3,470.93	134.72
	Jack Pine .....	638,796	23,376.26	4,369,393.50	87,681.56
	All Spruce .....	556,102	16,920.40	3,162,689.38	98,185.25
	Balsam .....	29,639	1,181.86	220,907.83	7,091.16
	Total .....	21,573,303	149,670,214.36	157,485,569.90	4,934,044.36
WEIGHT MEASURE					
	Hardwoods .....		4,881,864.65	8,163,113.61	57,876.53
	Total .....		4,881,864.65	8,163,113.61	57,876.53
MISCELLANEOUS					
Mining Timbers	White Birch.....	14	37.30	3,170.50	18.65
	Jack Pine .....	1,460	2,581.03	2,581.03	60.66
	All Spruce .....	9,491	16,395.20	16,395.20	621.61
Poker Poles	Hardwoods .....		1,759.36	149,545.60	2,381.99
Posts	Cedar.....	11	9.22	783.70	18.44
	Jack Pine .....	820	5,740.00	1,148.00	86.10
	Pine .....	1,690	642.08	2,432.00	6.44
	All Spruce .....	20	120.00	24.00	5.00
	Cedar.....	29,343	234,191.86	49,313.24	2,791.39
Christmas Trees	All Spruce .....	81,934	41,189.00	41,466.50	4,130.45
Other	White Pine .....		319.00	319.00	25.52
	Red Pine .....		49.00	49.00	3.92
	Jack Pine .....		7,474.14	7,474.14	184.61
	All Spruce .....		25,177.18	25,177.18	884.74
	Balsam .....		188.00	188.00	5.21
	Cedar.....		186.00	186.00	3.07
	Hardwoods .....		10,786.00	27,082.00	204.26
	Total .....	124,783	346,844.37	327,335.09	11,432.06
GRAND TOTAL .....					
		45,574,420		430,349,636.30	14,427,960.60

Number of District Cutting Licences issued and included in above: 2310

893,570.11

Conversion Factors: 1 cubic foot = 5.35 board feet

1 cord = 85 cubic feet

# TIMBER SALES

FROM APRIL 1, 1969, TO MARCH 31, 1970

Date Sold 1969	Locality	Area Sq. M.	No. of Tenders	To Whom Sold	Kind of Timber	Bid \$	Bonus \$	Dues \$	Total \$
May 16	Lynoch Township	0.3	2	Wallace Weichenthal Hardwood Lake, Ontario	White pine saw-logs	5.10	10.00	5.00	20.10 per MBM
					Red pine saw-logs	5.10	10.00	5.00	20.10 per MBM
					Spruce saw-logs	5.25	12.00	4.00	21.25 per MBM
					Cedar saw-logs	5.00	5.00	3.00	13.00 per MBM
					Hemlock saw-logs	3.00	5.00	3.00	11.00 per MBM
					Yellow birch saw-logs	6.00	11.00	5.00	22.00 per MBM
					White birch saw-logs	7.00	6.50	1.50	15.00 per MBM
					Poplar saw-logs	4.00	4.50	1.50	10.00 per MBM
					Maple saw-logs	5.00	8.00	5.00	18.00 per MBM
					Basswood saw-logs	4.00	11.00	5.00	20.00 per MBM
					Oak saw-logs	3.00	7.00	5.00	15.00 per MBM
					Ash saw-logs	5.00	5.00	5.00	15.00 per MBM
					Elm saw-logs	5.00	5.00	5.00	15.00 per MBM
					Beech saw-logs	6.00	4.50	1.50	12.00 per MBM
					Hardwood pulpwood	0.50	0.25	0.50	1.25 per cord
					Cedar pulpwood	0.10	0.60	1.40	2.10 per cord
May 22	Dungannon Township	0.2	5	George Tenthoirey L'Amable, Ontario	White pine saw-logs	15.25	10.00	5.00	30.25 per MBM
					Red pine saw-logs	15.25	10.00	5.00	30.25 per MBM
					Spruce saw-logs	14.25	12.00	4.00	30.25 per MBM
					Balsam saw-logs	5.00	6.00	4.00	15.00 per MBM
					White birch saw-logs	8.00	6.50	1.50	16.00 per MBM
					Poplar saw-logs	4.00	4.50	1.50	10.00 per MBM
					Maple saw-logs	3.00	8.00	5.00	16.00 per MBM
					Oak saw-logs	10.00	7.00	5.00	22.00 per MBM
					Balsam pulpwood	1.00	0.60	1.40	3.00 per cord
					Hardwood pulpwood	1.00	0.25	0.50	1.75 per cord
May 29	Adams and Eldorado Townships	0.1	3	George Rousson R.R. #1 Timmins, Ontario	Spruce pulpwood	2.00	1.20	2.80	6.00 per cord
					Jack pine pulpwood	2.00	2.00	2.00	6.00 per cord
May 29	Mayo Township	0.3	5	O. E. Rothwell Lumber Co. Ltd. Box 54 Lanark, Ontario	Spruce saw-logs	10.25	12.00	4.00	26.25 per MBM
					Balsam saw-logs	10.25	6.00	4.00	20.25 per MBM
					Cedar saw-logs	4.00	5.00	3.00	12.00 per MBM
					Hemlock saw-logs	6.00	5.00	3.00	14.00 per MBM
					Yellow birch saw-logs	10.25	11.00	5.00	26.25 per MBM
					White birch saw-logs	8.00	6.50	1.50	16.00 per MBM
					Poplar saw-logs	4.25	4.50	1.50	10.25 per MBM
					Maple saw-logs	15.50	8.00	5.00	28.50 per MBM
					Basswood saw-logs	15.50	11.00	5.00	31.50 per MBM
					Oak saw-logs	6.25	7.00	5.00	18.25 per MBM
					Ash saw-logs	3.25	5.00	5.00	13.25 per MBM
					Elm saw-logs	3.25	5.00	5.00	13.25 per MBM
					Beech saw-logs	8.25	4.50	1.50	14.25 per MBM
					Hardwood pulpwood	0.50	0.25	0.50	1.25 per cord

continued . .



# TIMBER SALES *(continued)*

FROM APRIL 1, 1969, TO MARCH 31, 1970

Date Sold 1969	Locality	Area Sq. M.	No. of Tenders	To Whom Sold	Kind of Timber	Bid \$	Bonus \$	Dues \$	Total \$
June 9	Evelyn Township	0.1	8	Rudolph McChesney Lumber Co. Ltd. Box # 150 267 Craft Road Timmins, Ontario	Jack pine saw-logs	0.07	0.0265	0.0235	0.12 per cu. ft.
June 17	Ashby Township	0.3	4	Tweed Veneers Ltd. P.O. Box 490 Tweed, Ontario	White pine saw-logs	20.00	10.00	5.00	35.00 per MBM
					Red pine saw-logs	10.00	10.00	5.00	25.00 per MBM
					Spruce saw-logs	10.00	12.00	4.00	26.00 per MBM
					Balsam saw-logs	5.00	6.00	4.00	15.00 per MBM
					Cedar saw-logs	5.00	5.00	3.00	13.00 per MBM
					Hemlock saw-logs	30.00	5.00	3.00	38.00 per MBM
					Yellow birch saw-logs	50.00	11.00	5.00	66.00 per MBM
					White birch saw-logs	20.00	6.50	1.50	28.00 per MBM
					Poplar saw-logs	20.00	4.50	1.50	26.00 per MBM
					Maple saw-logs	30.00	8.00	5.00	43.00 per MBM
					Basswood	10.00	11.00	5.00	26.00 per MBM
					Oak saw-logs	10.00	7.00	5.00	22.00 per MBM
					Ash saw-logs	10.00	5.00	5.00	20.00 per MBM
					Elm saw-logs	10.00	5.00	5.00	20.00 per MBM
					Beech saw-logs	15.00	4.50	1.50	21.00 per MBM
					Hardwood pulpwood	5.00	0.25	0.50	5.75 per cord
June 18	Cashel Township	0.4	4	Tweed Veneers Ltd. P.O. Box 490 Tweed, Ontario	Spruce saw-logs	10.00	12.00	4.00	26.00 per MBM
					Balsam saw-logs	5.00	6.00	4.00	15.00 per MBM
					Cedar saw-logs	5.00	5.00	3.00	13.00 per MBM
					Hemlock saw-logs	30.00	5.00	3.00	38.00 per MBM
					Yellow birch saw-logs	50.00	11.00	5.00	66.00 per MBM
					White birch saw-logs	20.00	6.50	1.50	28.00 per MBM
					Poplar saw-logs	25.00	4.50	1.50	31.00 per MBM
					Maple saw-logs	30.00	8.00	5.00	43.00 per MBM
					Basswood saw-logs	20.00	11.00	5.00	36.00 per MBM
					Oak saw-logs	10.00	7.00	5.00	22.00 per MBM
					Ash saw-logs	10.00	5.00	5.00	20.00 per MBM
					Elm saw-logs	10.00	5.00	5.00	20.00 per MBM
					Beech saw-logs	15.00	4.50	1.50	21.00 per MBM
					Hardwood pulpwood	2.00	0.25	0.50	2.75 per cord
June 24	Hassard Township	0.2	2	N. & H. Gagnon Contractors 310 Wilson Avenue Timmins, Ontario	Spruce pulpwood	1.50	0.60	2.80	4.90 per cord
					Jack pine pulpwood	1.50	0.50	2.00	4.00 per cord
July 10	South Canonto Township	0.6	4	M. J. Umpherson Clyde Forks Ontario	White pine saw-logs	25.00	10.00	5.00	40.00 per MBM
					Red pine saw-logs	25.00	10.00	5.00	40.00 per MBM
					Spruce saw-logs	24.00	12.00	4.00	40.00 per MBM
					Balsam saw-logs	20.00	6.00	4.00	30.00 per MBM

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# TIMBER SALES *(continued)*

FROM APRIL 1, 1969, TO MARCH 31, 1970

Date Sold 1969	Locality	Area Sq. M.	No. of Tenders	To Whom Sold	Kind of Timber	Bid \$	Bonus \$	Dues \$	Total \$
July 30	Bridgland Township	0.1	3	Jack Hermiston R.R. #3 Iron Bridge, Ontario	Hemlock saw-logs	15.00	5.00	3.00	23.00 per MBM
					Cedar saw-logs	15.00	5.00	3.00	23.00 per MBM
					Basswood saw-logs	24.00	11.00	5.00	40.00 per MBM
					Maple saw-logs	20.00	8.00	5.00	33.00 per MBM
					Elm saw-logs	15.00	5.00	5.00	25.00 per MBM
					Ash saw-logs	15.00	5.00	5.00	25.00 per MBM
					Oak saw-logs	20.00	7.00	5.00	32.00 per MBM
					Beech saw-logs	5.00	4.50	1.50	11.00 per MBM
					White birch saw-logs	15.00	6.50	1.50	23.00 per MBM
					Poplar saw-logs	5.00	4.50	1.50	11.00 per MBM
					Balsam pulpwood	1.00	0.35	1.65	3.00 per cord
					Hardwood pulpwood	0.50	0.15	0.60	1.25 per cord
					Yellow birch saw-logs	30.00	25.00	5.00	60.00 per MBM
					Maple saw-logs	5.00	5.00	5.00	15.00 per MBM
Aug. 7	Denbigh Township	0.2	2	Darwin Weichenthal Hardwood Lake Ontario	Spruce saw-logs	2.00	4.00	4.00	10.00 per MBM
					Hemlock saw-logs	—	3.00	3.00	6.00 per MBM
					White pine saw-logs	—	10.00	5.00	15.00 per MBM
					White pine saw-logs	8.00	10.00	5.00	23.00 per MBM
					Spruce saw-logs	5.00	12.00	4.00	21.00 per MBM
					Hemlock saw-logs	3.00	5.00	3.00	11.00 per MBM
					Cedar saw-logs	3.00	5.00	3.00	11.00 per MBM
					Basswood saw-logs	4.00	11.00	5.00	20.00 per MBM
					Maple saw-logs	4.00	8.00	5.00	17.00 per MBM
					Oak saw-logs	5.00	7.00	5.00	17.00 per MBM
					Beech saw-logs	6.00	4.50	1.50	12.00 per MBM
					White birch saw-logs	7.00	6.50	1.50	15.00 per MBM
					Poplar saw-logs	5.00	4.50	1.50	11.00 per MBM
					Balsam saw-logs	5.00	6.00	4.00	15.00 per MBM
Aug. 11	Janes Township	3.0	1	Pierre Aubin R.R. #1 Field, Ontario	Hardwood pulpwood	0.50	0.25	0.50	1.25 per cord
					Spruce pulpwood	0.50	0.20	2.80	3.50 per cord
					Balsam pulpwood	0.25	0.60	1.40	2.25 per cord
					Hemlock pulpwood	0.10	0.10	1.40	1.60 per cord
					Cedar pulpwood	0.15	0.60	1.40	2.15 per cord
					White pine saw-logs	1.00	10.00	5.00	16.00 per MBM
					Red pine saw-logs	0.50	10.00	5.00	15.50 per MBM
					Poplar saw-logs	2.00	3.50	1.50	7.00 per MBM
					White birch saw-logs	1.00	10.50	1.50	13.00 per MBM
					White pine pulpwood	—	1.10	1.40	2.50 per cord
					Red pine pulpwood	—	1.10	1.40	2.50 per cord
					Jack pine pulpwood	—	0.50	2.00	2.50 per cord
					Spruce pulpwood	—	0.70	2.80	3.50 per cord
					Balsam pulpwood	—	1.10	1.40	2.50 per cord
					Hardwood pulpwood	—	0.50	0.50	1.00 per cord

# TIMBER SALES *(continued)*

FROM APRIL 1, 1969, TO MARCH 31, 1970

Date Sold 1969	Locality	Area Sq. M.	No. of Tenders	To Whom Sold	Kind of Timber	Bid \$	Bonus \$	Dues \$	Total \$
Aug. 19	Grant Township	1.8	1	Art Lavigne R.R. #2 Mattawa, Ontario	White pine saw-logs	—	10.00	5.00	15.00 per MBM
					Red pine saw-logs	—	10.00	5.00	15.00 per MBM
					Poplar saw-logs	—	3.50	1.50	5.00 per MBM
					White birch saw-logs	—	10.50	1.50	12.00 per MBM
					White pine pulpwood	—	1.10	1.40	2.50 per cord
					Red pine pulpwood	—	1.10	1.40	2.50 per cord
					Spruce pulpwood	—	0.70	2.80	3.50 per cord
					Balsam pulpwood	—	1.10	1.40	2.50 per cord
					Hardwood pulpwood	—	0.50	0.50	1.00 per cord
Aug. 20	Denbigh Township	0.2	4	Tweed Veneers Ltd 39 Louisa Street Tweed, Ontario	Maple saw-logs	32.50	8.00	5.00	45.50 per MBM
					Yellow birch saw-logs	60.00	11.00	5.00	76.00 per MBM
					Basswood saw-logs	20.00	11.00	5.00	36.00 per MBM
					Beech saw-logs	18.00	4.50	1.50	24.00 per MBM
					White birch saw-logs	14.00	6.50	1.50	22.00 per MBM
					Ash saw-logs	10.00	5.00	5.00	20.00 per MBM
					Oak saw-logs	10.00	7.00	5.00	22.00 per MBM
					Elm saw-logs	8.00	5.00	5.00	18.00 per MBM
					White pine saw-logs	20.00	10.00	5.00	35.00 per MBM
					Hemlock saw-logs	8.00	5.00	3.00	16.00 per MBM
					Cedar saw-logs	8.00	5.00	3.00	16.00 per MBM
					Hardwood pulpwood	0.50	0.25	0.50	1.25 per cord
Aug. 22	Devitt Township	1.2	—	Jack Christianson P.O. Box 70 Mattice, Ontario	Spruce saw-logs	0.025	0.01	0.033	0.068 per cu. ft.
					Tamarack saw-logs	—	0.0265	0.0165	0.043 per cu. ft.
					Balsam saw-logs	—	0.0265	0.0165	0.043 per cu. ft.
					Cedar saw-logs	—	0.0265	0.0165	0.043 per cu. ft.
					Poplar saw-logs	—	0.0042	0.006	0.0102 per cu. ft.
					Spruce pulpwood	2.13	0.85	2.80	5.78 per cord
					Balsam pulpwood	—	2.25	1.40	3.65 per cord
					Poplar pulpwood	—	0.015	0.006	0.021 per cu. ft.
					of veneer quality				
					White birch pulpwood	—	0.015	0.006	0.021 per cu. ft.
					of veneer quality				

*continued . .*



# TIMBER SALES *(continued)*

FROM APRIL 1, 1969, TO MARCH 31, 1970

Date Sold 1969	Locality	Area Sq. M	No. of Tenders	To Whom Sold	Kind of Timber	Bid \$	Bonus \$	Dues \$	Total \$
Sept. 11	Casgrain Township	0.7	5	Normand Grondin Box 1045 Hearst, Ontario	Spruce saw-logs	0.037	0.007	0.033	0.077 per cu. ft.
					Balsam saw-logs	—	0.0235	0.0165	0.04 per cu. ft.
					Cedar saw-logs	—	0.0235	0.0165	0.04 per cu. ft.
					Tamarack saw-logs	—	0.0235	0.0165	0.04 per cu. ft.
					White birch saw-logs	—	0.012	0.0060	0.018 per cu. ft.
					Poplar saw-logs	—	0.012	0.0060	0.018 per cu. ft.
					Spruce pulpwood	3.15	0.60	2.80	6.55 per cord
					Balsam pulpwood	—	2.00	1.40	3.40 per cord
					Poplar pulpwood	—	0.60	0.50	1.10 per cord
					Poplar pulpwood of veneer quality	—	0.012	0.006	0.018 per cu. ft.
					White birch pulpwood of veneer quality	—	0.012	0.006	0.018 per cu. ft.
Sept. 22	Grant and Charlton Townships	1.4	1	Ray Champagne Ltd. Mattawa, Ontario	White pine saw-logs	—	10.00	5.00	15.00 per MBM
					Red pine saw-logs	—	10.00	5.00	15.00 per MBM
					Spruce saw-logs	—	0.007	0.033	0.04 per cu. ft.
					White birch saw-logs	—	10.50	1.50	12.00 per MBM
					Poplar saw-logs	—	3.50	1.50	5.00 per MBM
					Spruce pulpwood	—	0.70	2.80	3.50 per cord
					Balsam pulpwood	—	1.10	1.40	2.50 per cord
					White pine pulpwood	—	1.10	1.40	2.50 per cord
					Red pine pulpwood	—	1.10	1.40	2.50 per cord
					Hardwood pulpwood	—	0.50	0.50	1.00 per cord
1970 Feb. 11	Van Kough- net Township	0.5	4	Fleron Lumber Company Limited R.R. #4 Hwy. 17E Sault Ste. Marie Ontario	White pine saw-logs	10.00	15.00	5.00	30.00 per MBM
					Spruce saw-logs	5.00	11.00	4.00	20.00 per MBM
					Balsam saw-logs	3.50	11.00	4.00	18.50 per MBM
					Cedar saw-logs	3.00	7.00	3.00	13.00 per MBM
					Maple saw-logs	6.75	15.00	5.00	26.75 per MBM
					Yellow birch saw-logs	31.50	25.00	5.00	61.50 per MBM

# CROWN TIMBER LICENCES, 1969-70

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
April 10/69	Regional Logging Industries Limited P.O. Box 519, Dryden, Ontario	MacFie Township	1969	New
April 17/69	The Great Lakes Paper Company Limited P.O. Box 430, Postal Station "F" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
April 17/69	Central Timber Products P.O. Box 431, Red Lake, Ontario	Balmer, Byshe & Ranger Townships	1972	Reissue
April 17/69	Patrick Robillard P.O. Box 539, Red Lake, Ontario	Unsurveyed Territory Kenora District	1971	Reissue
April 17/69	Pearson Forest Products Limited Box 219, Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1971	Reissue
April 17/69	William Rothenburger 489 Lyon Avenue, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1974	Reissue
April 17/69	The Great Lakes Paper Company Limited P.O. Box 430, Postal Station "F" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
April 17/69	William G. Gaudry R.R. #1, Sleeman, Ontario	Senn Township	1969	New
April 17/69	Northern Forest Products Limited P.O. Box 990, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1971	Reissue
April 17/69	Northern Forest Products Limited P.O. Box 990, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Kenora District	1979	Reissue
April 17/69	J. E. Martel and Sons Lumber Ltd. Box 488, Chapleau, Ontario	Lipsett Township	1971	Reissue
April 17/69	Abitibi Paper Company Ltd. Toronto-Dominion Centre Toronto 1, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
April 17/69	Northern Forest Products Limited P.O. Box 990, Postal Station "P" Thunder Bay, Ontario	Pardee Township	1971	Reissue
April 17/69	George Kenneth Stringer Box 983, South Porcupine, Ontario	Gowan & Wark Townships	1971	Reissue
April 17/69	Abitibi Paper Company Limited Toronto-Dominion Centre Toronto 1, Ontario	Goodfellow & Fallis Townships	1970	New

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
April 24/69	Sam Mitchell Englehart, Ontario	Mulligan Township	1971	Reissue
April 24/69	Pembroke Lumber Company Limited P.O. Box 201, Pembroke, Ontario	White, Edgar & Fitzgerald Townships	1970	Reissue
May 1/69	Reginald F. Walker Englehart, Ontario	Mulligan Township	1971	Reissue
May 1/69	Rudolph-McChesney Lumber Company Box 150, Timmins, Ontario	Hillary Township	1974	Reissue
May 1/69	Woollings Forest Products Limited Englehart, Ontario	Sharpe Township	1972	Reissue
May 1/69	Jake E. Stewart Limited R.R. # 1, Deep River, Ontario	Head, Bronson & Rolph Townships	1971	Reissue
May 1/69	Temiskaming Wood Products Limited Main Street, Kirkland Lake, Ontario	Arnold, Gauthier & Katrine Townships etc.	1972	Reissue
May 1/69	Weldwood of Canada Ltd. P.O. Box 395, Norwich Avenue Woodstock, Ontario	Sherborne, McClintock & Livingstone Townships etc.	1972	Reissue
May 1/69	Gillies Brothers & Co. Ltd. P.O. Box 68 Portage Du'Fort, Quebec	Fitzgerald Township	1971	Reissue
May 1/69	Wm. Pollock & Son Limited Englehart, Ontario	Sharpe & Truax Townships May 1/69	1971	Reissue
May 1/69	Widjiitiwin Corporation St. May's Indian School Box 40, Kenora, Ontario	Unsurveyed Territory Kenora District	1972	New
May 8/69	Kokotow Lumber Limited 5 McCamus Avenue Kirkland Lake, Ontario	Dunmore Township	1970	New
May 8/69	Oscar Styffe Limited Postal Station "P" Thunder Bay, Ontario	Hardwick & Lismore Townships	1971	Reissue
May 8/69	Joseph Kirouac Red Lake Road, Ontario	Unsurveyed Territory Kenora District	1970	New
May 8/69	Leonard Jones Red Lake Road, Ontario	Unsurveyed Territory Kenora District	1970	New
May 8/69	Gerald Junkin Bobcaygeon, Ontario	Galway Township	1972	Reissue
May 8/69	Maurice Ouellette P.O. Box 64, Dryden, Ontario	Unsurveyed Territory Kenora District	1970	New

*continued . . .*



# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
May 8/69	Henry Johnson Timber Co. Ltd. 369 Queen Street E. Sault Ste Marie, Ontario	3H Township	1972	New
May 8/69	Bruce Campbell Quibell, Ontario	Unsurveyed Territory Kenora District	1970	New
May 8/69	Woollings Forest Products Ltd. Englehart, Ontario	Cook Township	1972	Reissue
May 8/69	Hector Clouthier R.R. #6, Pembroke, Ontario	Head Township	1972	Reissue
May 8/69	J. H. Normick Ltee Box 2500, La Sarre, Quebec	Sargeant & Berry Townships	1970	New
May 15/69	Rene Ross Red Lake Road, Ontario	Unsurveyed Territory Kenora District	1970	New
May 15/69	J. H. Normick Ltee Box 2500, La Sarre, Quebec	Marriott, Stoughton & Frechville Townships etc.	1970	New
May 15/69	Oscar Styffe Limited Box 146, Postal Station "P" Thunder Bay, Ontario	Hardwick, Lismore & Robbins Townships etc.	1971	Reissue
May 15/69	Feldman Timber Company Limited Timmins, Ontario	Godfrey Township	1970	Reissue
May 15/69	Malette Lumber Limited P.O. Box 91, Timmins, Ontario	Cote & Massey Townships	1970	New
May 15/69	Kerr Addison Mines Limited Virginiatown, Ontario	Cassian, Katrine & McVittie Townships etc	1972	Reissue
May 15/69	Chapleau Lumber Company Limited Chapleau, Ontario	Lipsett Township	1971	Reissue
May 15/69	Mattice Lumber Company Limited Mattice, Ontario	Fleck Township	1971	New
May 15/69	A & L Lafreniere Lumber Ltd. P.O. Box 340, Chapleau, Ontario	Busby and Lipsett Townships	1971	Reissue
May 15/69	Kormak Lumber Co. Limited 6 Dufferin Street, Sudbury, Ontario	De Gaulle Township	1972	New
May 15/69	Multiply Plywoods Limited P.O. Box 910, Nipigon, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
May 22/69	Trilake Timber Company Ltd. P.O. Box 361, Kenora, Ontario	Bridges Township	1973	New
May 22/69	Wesont Lumber Company Ltd. P.O. Box 89, Clifford, Ontario	Ashby & Mayo Townships	1974	Reissue

*continued . . .*

# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
May 22/69	Grant Lumber Company Ltd. Sixth Street, Elk Lake, Ontario	Dunmore Township	1970	New
May 22/69	Weldwood of Canada Limited P.O. Box 395, Norwich Avenue Woodstock, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
May 22/69	Wilfred Paiement Earlton, Ontario	Burt Township	1970	New
May 29/69	Elmer Krieger Palmer Rapids, Ontario	Griffith Township	1972	Reissue
June 5/69	Ankney and Franklin Contracting Ltd. Savant Lake, Ontario	McCubbin, Conant and Boucher Townships	1970	New
June 5/69	Regional Logging Industries Limited P.O. Box 519, Dryden, Ontario	MacFie Township	1970	New
June 5/69	Feldman Timber (Matheson) Ltd. P.O. Box 440, Timmins, Ontario	Garrison, Harker & Elliott Townships etc.	1970	New
June 5/69	Multiply Plywoods Limited P.O. 910, Nipigon, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
June 5/69	Ernest Peters R.R. #2, Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1972	New
June 5/69	T. E. Woollings Englehart, Ontario	Clifford Township	1970	New
June 12/69	Vic Pearson & Sons Limited Box 113, Fort Frances, Ontario	Farrington Township	1973	New
June 12/69	Maurice Lecours Box 1000, Hearst, Ontario	Bannerman Township	1971	Reissue
June 12/69	Devlin Timber Company Ltd. 59 Drewey Drive, Kenora, Ontario	Rice, Gundy & Malachi Townships etc.	1974	New
June 19/69	Flek Timber Company Ltd. Opasatika, Ontario	Fleck Township	1971	New
June 19/69	Buchanan Brothers (Ontario) Limited Red Rock, Ontario	Glen & McMaster Townships	1970	New
June 19/69	August E. Quade Quadeville, Ontario	Griffith & Lyndoch Townships	1972	Reissue
June 19/69	Rene Fabris P.O. Box 327, Elliott Lake, Ontario	Esten Township	1970	New
June 19/69	Cockburn Lumber Limited General Delivery, Capreol, Ontario	McLeod, Ellis & Selkirk Townships	1972	New
June 19/69	Dubreuil Brothers Limited Dubreuilville, Ontario	Townships 29, 53 and 54 etc.	1974	New

# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
June 26/69	Domtar Limited P.O. Box 7210, Montreal, Quebec	Faraday, Limerick & Tudor Townships etc.	1974	Reissue
July 3/69	George R. Stein Schutt, Ontario	Ashby Township	1974	Reissue
July 10/69	Pembroke Lumber Company Limited P.O. Box 201, Pembroke, Ontario	White, Edgar & Fitzgerald Townships	1970	Reissue
July 10/69	Charles Leray R.R. # 1, Keewatin, Ontario	Gidley Township	1972	New
July 10/69	Buchanan Brothers (Ontario) Limited Red Rock, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
July 10/69	J. Lafreniere and Sons Ltd. Box 126, Sturgeon Falls, Ontario	Angus, Parkman & Burnaby Townships	1972	Reissue
July 10/69	Howard-Bienvenu Inc. La Sarre, Quebec	Lamplugh & Harker Townships	1970	New
July 10/69	Gillies Bros. & Co. Ltd. P.O. Box 68 Portage Du Fort, Quebec	Fitzgerald Township	1971	Reissue
July 10/69	Jake E. Stewart Limited R.R. # 1, Deep River, Ontario	Head, Rolph & Bronson Townships	1971	Reissue
July 10/69	Swanson Bros. Logging Contractor P.O. Box 1209, Cochrane, Ontario	Beniah Township	1970	New
July 10/69	J. D. Levesque Box 460, Hearst, Ontario	Shannon Township	1971	Reissue
July 10/69	Woollings Forest Products Limited Englehart, Ontario	Terry Township	1972	Reissue
July 10/69	Pembroke Lumber Co. Limited P.O. Box 201, Pembroke, Ontario	White & Fitzgerald Townships	1971	Reissue
July 17-69	Ranger Logging Limited 99 Pine Street Sault Ste Marie, Ontario	Twp. 175	1972	Reissue
July 17/69	Boreal Timber Limited Box 627, Postal Station "P" Thunder Bay, Ontario	Goldie Township	1971	Reissue
July 17/69	G. A. Querel Box 54, Vermilion Bay, Ontario	Unsurveyed Territory Kenora District	1970	New
July 17/69	Benoit D'Amours R.R. # 1, Moonbeam, Ontario	Nansen Township	1970	New

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
July 17/69	J. Leo Gauthier Limited 188 Tanguay Street Sudbury, Ontario	Cotton & Howey Townships	1973	New
July 17/69	J. Leo Gauthier Limited 188 Tanguay Street	Cotton & Howey Townships	1973	New
July 17/69	Rene Champoux Wabos, Ontario	Marne Township	1970	New
July 17/69	Chantier Co-Operative de Barker Val Rita, Ontario	Barker Township	1970	New
July 17/69	The Great Lakes Paper Company Limited Postal Station "F" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay	1982	Reissue
July 17/69	Roy Bye 179 Woodward Ave., Sault Ste Marie	Hodgins Township	1971	Reissue
July 17/69	Malette Lumber Limited P.O. Box 91, Timmins, Ontario	Fortune Township	1975	New
July 17/69	Herb Shaw and Sons Limited R.R. #6, Pembroke, Ontario	Bronson, Stratton & Head Townships	1971	Reissue
July 17/69	Rosaire Bouchard R.R. #1, Moonbeam, Ontario	Hansen Township	1970	Reissue
July 17/69	Sawyer-Stoll Lumber Company of Canada Limited Kaladar, Ontario	Miller Township	1971	Reissue
July 24/69	Laurent Duplin Searchmont, Ontario	Sheilds Township	1970	New
July 24/69	Henry Johnson Timber Co. Limited 368 Queen Street East Sault Ste Marie, Ontario	Townships 22 and 23	1971	Reissue
July 24/69	Lionel Gauthier R.R. #2, Heyden, Ontario	Hodgins Township	1970	New
July 31/69	Northern Forest Products Limited Box 990, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
July 31/69	Milton K. Krieger R.R. #1, Rainy River, Ontario	Tweedsmuir & Phillips Townships	1974	New
July 31/69	Louis Brun Co. Ltd Field, Ontario	McNish Township	1972	Reissue
August 7/69	Consolidated-Bathurst Limited Box 68, Portage Du Fort, Quebec	Hartle & Burnaby Townships	1973	Reissue

# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
August 13/69	Isidore Carre River Valley, Ontario	Pardo Township	1972	Reissue
August 13/69	Veilleux Brothers Limited Shiningtree, Ontario	Stull Township	1971	New
August 13/69	Dryden Paper Company Limited Dryden, Ontario	Unsurveyed Territory Kenora District	1970	New
August 21/69	Midway Lumber Mills Limited Thessalon, Ontario	Township 1F	1975	New
August 21/69	Alfred Isabelle Box 119, Opasatika, Ontario	McCowan Township	1970	New
August 21/69	Ross Lake Lumber Limited 604 Oakwood Avenue North Bay, Ontario	Notman Township	1972	New
August 21/69	Ludger Otis 73 Royal York Blvd. Sault Ste Marie, Ontario	Hodgins Township	1970	New
August 21/69	G & B Logging Limited 5 First Avenue, Wawa, Ontario	Townships 30 & 31	1970	New
August 21/69	Regis Poulin 378 Frontenac Street Sault Ste Marie, Ontario	Township 27	1970	New
August 21/69	Henry Selin Forest Products Limited Hearst, Ontario	McFarlan Township	1974	New
September 4/69	Gagnon Lumber Limited Box 519, Kenora, Ontario	Unsurveyed Territory Kenora District	1972	New
September 11/69	Boreal Timber Limited Box 627, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
September 11/69	Weyerhaeuser of Canada Ltd. P.O. Box 179 Richmond Hill, Ontario	Township 28	1970	New
September 11/69	Herb Shaw & Sons Ltd. R.R. #6, Pembroke, Ontario	Niven & Dickson Townships	1971	Reissue
September 11/69	Howard Smith Paper Mills Limited P.O. Box 7210 Montreal 101, Quebec	Cameron, Papineau & Boyd Townships etc.	1972	New
September 11/69	Herb Shaw and Sons Ltd. R.R. #6, Pembroke, Ontario	Niven Township	1971	Reissue

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
September 11/69	Weyerhaeuser of Canada Limited Box 179, Richmond Hill, Ontario	Township 28	1970	New
September 18/69	Murray Bros. Lumber Co. Ltd. Barrys' Bay, Ontario	Clancy Township	1971	Reissue
September 18/69	Grant and Wilson Lumber Limited Swastika, Ontario	Burt Township	1970	New
September 18/69	La Societe Co-Operative De Mattice Mattice, Ontario	McCrea Township	1970	New
September 25/69	William A. McMurray Gilmour, Ontario	Cashel Township	1974	New
October 2/69	Weyerhaeuser of Canada Limited Box 179, Richmond Hill, Ontario	Osborne, Portas & Eddy Townships etc.	1990	New
October 2/69	L. H. Jan L'Amable, Ontario	Anstruther Township	1976	New
October 2/69	Murray Bros. Lumber Co. Ltd. Barrys' Bay, Ontario	Dickson & Anglin Townships	1970	New
October 2/69	Feldman Timber Company Limited Timmins, Ontario	Enid Township	1970	New
October 2/69	James Gibson & Sons Limited P.O. Box 734, North Bay, Ontario	Blyth Township	1974	New
October 2/69	Boyes Brothers Vankoughnet, Ontario	Oakley Township	1973	New
October 9/69	Louis Charland 712 Third Line West Sault Ste Marie, Ontario	Gaudette Township	1970	New
October 23/69	Meadowside Lumber Limited 1230 Fraser Street North Bay, Ontario	Charlton & Lyman Townships	1970	New
November 13/69	The Great Lakes Paper Company Limited P.O. 430, Postal Station "F" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
November 13/69	Regis Poulin 378 Frontenac Street Sault Ste Marie, Ontario	Township 27	1970	New
November 13/69	Isidore Roy 175 Front Street Sturgeon Falls, Ontario	Davis Township	1971	New

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
November 13/69	Rogerson Lumber Company Limited Port Loring, Ontario	Stalin Township	1972	New
November 13/69	The Great Lakes Paper Company Limited P.O. Box 430, Postal Station "F" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
November 12/69	Lecours Lumber Company Calstock, Ontario	Auden Township	1970	New
November 27/69	L. Vincent Burns Box 222, Massey, Ontario	Tennyson Township	1971	Reissue
December 4/69	Wabigoon Lakes Corporation Dinorwick, Ontario	Satterly Township	1977	New
December 4/69	Maurice Lacoursiere Searchmont, Ontario	Gaudette and Hodgins Township	1970	New
December 11/69	Floyd E. M. Drager P.O. Box 168 Red Lake, Ontario	Unsurveyed Territory Kenora District	1972	New
Dec. 18/69	Patrick Robillard Box 539, Red Lake, Ontario	Unsurveyed Territory Kenora District	1974	New
January 22/70	T. G. Fleron Limited Thessalon, Ontario	Haughton Township	1972	New
January 29/70	The Morrison Bros. Ltd. Marten River, Ontario	Flett Township	1972	New
January 29/70	Spruce Falls Power and Paper Company Limited 2 Carlton Street, Toronto	Bradley, Harmon and Cockshutt Townships etc.	1982	Reissue
January 29/70	Wilfred Paiement Earlton, Ontario	Burt Township	1971	New
January 29/70	Peter Denys Point Aux Pin Sault Ste Marie, Ontario	Township 27	1971	Reissue
February 5/70	Firesteel Contractors Limited P.O. Box 1194, Postal Station "P" Thunder Bay, Ontario	Langworthy Township	1974	New
February 5/70	Grant Lumber Co. Ltd. Sixth Street, Elk Lake, Ontario	Dunmore Township	1971	New
February 5/70	A. E. Jacobson Lumber Co. Ltd. 223 South Hill Street Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1973	New

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
February 5/70	Laurent Duplin Searchmont, Ontario	Shields Township	1970	New
February 12/70	Lambert Wasmund Maple Leaf, Ontario	Wicklow & Herschel Townships	1975	Reissue
February 12/70	Shuniah Contracting Limited R.R. # 13, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1970	New
February 19/70	K. Kutschke & Son Limited R.R. # 1, Pembroke, Ontario	Rolph and Wylie Townships	1973	Reissue
February 19/70	Louis Charland 712 Third Line West Sault Ste Marie, Ontario	Gaudette Township	1971	Reissue
February 19/70	August E. Quade Quadeville, Ontario	Brudnell and Lyndoch Townships	1970	New
February 26/70	Malette Lumber Limited P.O. Box 91, Timmins, Ontario	Cote, Massey and Whitesides Townships	1971	New
February 26/70	Denis Dostie P.O. Box 1328 Blind River, Ontario	Montgomery Township	1971	Reissue
February 26/70	Pearson Forest Products Limited P.O. Box 219 Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1972	Reissue
February 26/70	Frank X. Landry Box 27, Atikokan, Ontario	Schwenger Township	1973	Reissue
February 26/70	Kent Brothers Limited R.R. # 1, Sundridge, Ontario	Butt Township	1971	Reissue
February 26/70	Vernon Armstrong P.O. Box 429 Fort Frances, Ontario	Griesinger Township	1972	Reissue
February 26/70	Seine River Tourist and Timber Limited P.O. Box 399 Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1973	Reissue
February 26/70	Boreal Timber Limited P.O. Box 627, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Thunder Bay District	1971	New
February 26/70	Dawson Robinson Maynooth, Ontario	McClure Township	1975	New
March 5/70	Malette Lumber Limited P.O. Box 91, Timmins, Ontario	Kenogaming Township	1973	Reissue

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
March 5/70	Vic Pearson and Sons Limited Box 113, Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1972	Reissue
March 5/70	Kormak Lumber Company Limited 6 Dufferin Street Sudbury, Ontario	Nimitz Township	1971	Reissue
March 5/70	Nym Lake Timber Company Box 760, Atikokan, Ontario	Unsurveyed Territory Rainy River District	1972	New
March 5/70	Hoey & McMillan Limited Box 2019, Dryden, Ontario	Bridges Township	1976	New
March 5/70	William Saskosky P.O. Box 575, Red Lake, Ontario	Unsurveyed Territory Kenora District	1971	New
March 5/70	Albert Kapush Contracting Limited R.R. #2, Postal Station "P" Thunder Bay, Ontario	Unsurveyed Territory Rainy River District	1971	New
March 5/70	M. J. Labelle Co. Ltd. Box 410, Cochrane, Ontario	Leitch Township	1973	Reissue
March 5/70	William Stewart Murray Flanders, Ontario	Unsurveyed Territory Rainy River District	1973	Reissue
March 12/70	Kokotow Lumber Limited 5 McCamus Avenue Kirkland Lake, Ontario	Dunmore Township	1971	New
March 12/70	T. E. Woollings Englehart, Ontario	Clifford Township	1971	New
March 12/70	J. H. Normick Ltee Box 2500, La Sarre, Quebec	Sargeant Township	1971	New
March 12/70	J. H. Normick Ltee Box 2500, La Sarre, Quebec	Marriott, Rand and Harker Townships etc.	1971	New
March 19/70	Rudolph McChesney Lumber Company Limited Box 150, Timmins, Ontario	Kenogaming Township	1975	Reissue
March 19/70	Maurice Lecoursiere Searchmont, Ontario	Hodgins and Gaudette Townships	1971	Reissue
March 19/70	Ernest Peters R.R. #2, Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1973	New
March 19/70	Chapleau Lumber Company Limited Chapleau, Ontario	Buckland and Ramsden Townships	1972	Reissue
March 19/70	Leo Lapierre 418 Wilson Avenue Timmins, Ontario	Sewell Township	1973	Reissue

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# CROWN TIMBER LICENCES, 1969-70 *(continued)*

ISSUED BY VIRTUE OF SECTION 3(1) OF C.T.A.

Date	Licensee	Location	Expiry March 31st	Type of Transaction
March 19/70	Vic Pearson & Sons Limited Box 113, Fort Frances, Ontario	Unsurveyed Territory Rainy River District	1972	Reissue
March 19/70	Clarence Wasmund Maple Leaf, Ontario	Wicklow Township	1972	Reissue
March 26/70	Liskeard Lumber Limited 159 Faren Street New Liskeard, Ontario	McGiffin Township	1971	Reissue
March 26/70	Lynch and LeMay 190 Juniper Drive Postal District "P" Thunder Bay, Ontario	Fraleigh Township	1971	Reissue
March 26/70	Multiply Plywoods Ltd. Box 910, Nipigon, Ontario	Conacher and Blackwell Township	1971	New
March 26/70	Central Timber Products Red Lake, Ontario	Unsurveyed Territory Kenora District	1973	New







